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ABSTRACT

A study providing a descriptive and explanatory analysis of the representative stages of language acquisition found in a sample of 12 working-class black children ranging from 18 months to 4.6 years is reported. Previous general language research concerned with linguistic abilities of working-class black children is critically evaluated, and the impact of this research on language acquisition studies within this population is examined. Two guidelines for conducting future language acquisition studies with black children are recommended. The general method and procedures for this study and specific procedures for the semantic category analysis and phonological analysis are outlined, and the results of the study are presented. Three analyses are included: (1) a descriptive and explanatory account of the general types of semantic categories that are linguistically coded by this population at different developmental stages, (2) a detailed description of the subcategories that differentiate the general category of location, and (3) a phonological analysis focusing on the acquisition of final consonants. Practical and theoretical implications of the findings are examined. Appendices include the standard checklist questionnaire, parent consent form, letter of agreement to parents, standard recording form, case history form, and log of the sampling session. A bibliography is included. (MSE)

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A Developmental Study of Black English - Phase I

National Institute of Education Grant Number NIE-G-80-0135

Final Report

Ida J. Stockman, Fay Boyd Vaughn-Cooke and Walt Wolfram

Center for Applied Linguistics

Washington, D.C.

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PREFACE

The research presented in this report was conducted under contract number NIE-G-80-0135, project number 5458 with the National Institute of Education from August 1, 1980 to July 31, 1982. The major goal of the project was to provide a data base and a descriptive and explanatory analysis of the representative stages of language acquisition found in a sample of 12 working-class Black children ranging in age from 18 months to 4;6 years. The report consists of five chapters. Chapter I provides a critical evaluation of the general language research that has been concerned with the linguistic abilities of working-class Black children, and examines the impact this research has had on language acquisition studies that have focused on this population. Two fundamental guidelines are recommended for conducting future language acquisition research on Black children. Chapter II provides a detailed description of the general method and procedures for the research. Specific procedures for the semantic category analysis and the phonological analysis are presented in Chapters III and IV respectively. These two chapters also present the major findings of the research. Chapter III reports the findings from the general semantic category analysis, and the results of the specific analysis for one semantic category. The objective of the general analysis was to provide a descriptive and explanatory account of the general types of semantic categories that are linguistically coded by working-class Black children at different developmental stages, while the objective of the specific analysis was to provide a detailed description of the sub-categories that differentiate the general category of location. Chapter IV reports the results of the phonological analysis, which focused on the acquisition of final consonants.

In Chapter V we examine the practical and theoretical implications of the project findings. The results of the semantic category analysis are already being utilized in a speech and hearing clinic which provides language evaluations for working-class Black speakers.

The data collection and first analytical phase of the Developmental Study of Black English were carried out by a team of researchers. Fay Vaughn-Cooke and Ida Stockman, the project co-principal investigators, and Cherri Bridgeforth and Jackie Smalls, research assistants, were responsible for data collection, extraction, and organization. The co-principal investigators conducted the semantic category analysis, while Walt Wolfram, research associate, was responsible for conducting the phonological analysis and providing all of the phonetic transcriptions for the project.

Many other people played critical roles in the project. These include, first and foremost, the subjects and their families, who cordially welcomed us into their homes once a month for a very long period of time - a year and a half. These families kindly allowed us to set up eighty pounds of videotape equipment in any room that was most convenient for the taping process. Their cooperation, consideration, concern and tolerance made it possible for us to establish one of the most extensive data bases in the field of child language. We are deeply indebted to the subjects and their families for the important contribution they have made to language acquisition research. We are also indebted to Connie Reddicks, principal at Midtown Montessori School, Edith Harvey, Director of Capital Headstart, and Segrid Caudle, Director of Parent-Child Center. These administrators provided invaluable assistance in locating the subjects.

The progress we have made in the area of data extraction would not have been possible without the energetic assistance of two groups of summer interns. These included Willette Oliver, Jackie Smalls, Sandra Williams, Kay Payne, Wilhemenia Reveron, Valerie Rushdan, and Patricia Cole. We are grateful to them for their contribution and to the Center for Applied Linguistics (CAL) which provided support for the interns during their assignment to the project. CAL was especially supportive throughout the project. The institution provided generous support for travel to conferences; the high quality equipment for the project; and a forum for presenting project results.

Finally, we are indebted to our colleagues at the Center for Applied Linguistics, Howard University, and the University of the District of Columbia. Ceil Lucas, Denise Borders-Simmons, Elaine Bowman, and David Woods were especially encouraging, particularly during the demanding data collection phase. Ruby Berkemeyer supported us throughout the project by providing expert management and organization of all administrative details.

Fay Vaughn-Cooke
Ida Stockman
Co-Principal Investigators
December, 1982

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INTRODUCTION

Knowledge concerning language development is an essential prerequisite for meeting the educational needs of children. Language is the means through which children transmit knowledge and the tool which educators use to assess their educational progress. Understanding what language skills children have and how they utilize them is, therefore, necessary as a background for investigating a range of educational skills.

In the past two decades, the field of child language has made significant contributions toward understanding the process by which language is learned. A survey of language acquisition research in the United States, however, reveals an obvious concentration on mainstream varieties of English such as those spoken by White middle-class children. On the other hand, the acquisition of nonmainstream dialects including that acquired by a large number of working-class Black children, remains virtually unexplored.

From a practical perspective, several types of interrelated educational problems arise from the paucity of adequate knowledge on the acquisition of a minority group dialect such as Black English (hereafter referred to as BE). First, an assessment problem may arise. An important aspect of the educational process is assessing children's capabilities and development. Results from the improper application of evaluation tools or the use of invalid measures can result in the serious misdiagnosis of children's level of functioning. Thus, it is not surprising that Mercer and Brown (1973) found that results from the invalid evaluation tools served as the basis for labelling about three times more Blacks as mentally retarded than would be expected on the basis of their proportion in the general population. The absence of knowledge about working class Black childrens' language development

can prevent educators from making a valid assessment of children's performances on language related tasks.

Second, a norming problem may arise. As with any population, there exists a small percentage of the working-class Black population who exhibits authentic language diabilities. Without relevant norms for comparing speakers of this population, it is difficult to make appropriate diagnosis. While it seems apparent that the norms used to assess the language capabilities of middle-class White children can not be applied unilaterally to the working-class Black population without great danger of misdiagnosis and misclassification (Wolfram, 1976, Vaughn-Cooke, 1980a, 1980b) comparable norms do not exist for the Black English-speaking population. Thus the absence of data may result in failure to identify those children within the population who exhibit language disabilities.

Finally, we should mention the equity problem, an issue that has taken on legal significance in recent years. For example, in the much publicized case involving the Ann Arbor School District (Civil Action No. 7-71861), it was ruled that children speaking a version of Black English might be impeded in their equal participation in the educational process, and that the school had not taken appropriate action to overcome the barrier. It seems apparent though that educational barriers created by language diversity cannot be forcefully or practically addressed in the absence of knowledge about the general and dialect specific language patterns that Black children bring to the classroom. Such basic information would be the first step toward assuring that the opportunity for equal participation is not abridged, for example, by failure to isolate dialect differences from delayed or impaired language functioning when decisions are made about educational placement.

Only in the past decade has a small nucleus of studies emerged which attempts to respond to the critical need for data on Black children's acquisition of their native dialect. These include, among others, the pioneering works of Henrie (1969), Stokes (1976), Cole (1979), Steffenson (1974), Kovac (1980) and Reveron (1978). Henrie (1969) provided a study of particular verb phrases used by a five-year-old Black English speaker, while Stokes (1976) compared a select set of negative structures based on 35 three to five year old speakers' responses to a dialect elicitation task; Cole (1979) also used an elicitation task to determine when a select group of Black English structures (e.g., pluralization, possession, past tense, copula, etc.) was acquired by sixty girls between the ages of three and five years; Kovac (1980) investigated the acquisition of one variable structure (copula absence) in children between the ages of four and six; Steffensen (1974) examined the emergence of grammatical forms such as plural and possessive inflections, past tense inflections, pronominal case, etc., for two working-class Black children at the early stages of development (18 to 24 months); and Reveron (1978) examined the occurrence of plural, possessive, past tense, and third-person singular morphological markers in the elicited response of 80 children between the ages of 3 and 6 years.

While such studies represent important pioneering efforts to bridge the knowledge gap on the language development of Black children, they exhibit several limitations that motivate the need for further work. First, the restricted focus on the small subset of language structures that have been described for Black English has not yielded the broad view of the child's developing language competence that would be needed to build appropriate language assessment tools. A further limitation is their exclusive focus

on grammatical form without regard to the content expressed. Consequently, the results do not help to counter erroneous conclusions that have been drawn about the linguistic competence of BE speakers insofar as the kind of underlying knowledge their language represents. It should be mentioned further that even with respect to linguistic forms, little or no work has been done on the acquisition of phonological rules. Finally, we do not have a systematic study of the acquisitional processes over an adequate age range, starting from an early period and extending to the later periods of development, and very little naturalistic data are available.

In response to the obvious need to expand the knowledge base on the acquisition of language by working-class Black children, the Developmental Study of Black English was initiated in 1980. This large scale, longitudinal and crosssectional investigation represents a major shift away from the goals of the earlier research. The primary goals of the project evolved from recent theoretical and methodological advances in the field of developmental psycholinguistics. The study has focused on the stages which characterize the processes involved in acquiring the total Black English system, not just those structures that differ from Standard English. Thus, the major goal of this developmental project is to provide a data base and descriptive and explanatory analysis of the representative stages of language acquisition found in a sample of 12 working-class Black children ranging in age from 18 months to 4;6 years. Specifically it seeks to:

1) identify the kind of semantic or conceptual knowledge ("content" following Bloom and Lahey (1978)) that is linguistically coded at different developmental stages;
2) describe the changes over time and the specific order of acquisition of the semantic knowledge;

3) describe the changes over time and the specific order of acquisition in the types of grammatical patterns used to code semantic knowledge at different developmental stages;

4) describe changes over time and the order of acquisition in the types of phonological patterns in the emerging Black English phonology;

5) describe stages in the acquisition of variable phonological and grammatical rules in Black English that differentiate this variety from other varieties of English;

6) examine sex as a possible variable in accounting for variation among speakers acquiring Black English; and

7) provide a data base and descriptive framework from which large-scale norming for developmental stages in the acquisition of Black English may be undertaken.

The multifaceted scope of the study's objectives reflects a strong conviction that a vigorous response to the limited language acquisition data on Black children requires nothing less than a programmed investigative approach to the problem. By programmed, is meant a systematic research plan that is conceptualized from the outset as a coordinated series of investigations aimed at revealing the broad range of competencies exhibited by this subgroup of children. In the face of major gaps in knowledge that need filling to rectify the practical problems of language assessment in educational and clinical settings, an analysis of just one or two isolated syntactic, morphological, phonological or semantic features seemed inadequate.

To accomplish the first two objectives outlined above, a theoretical orientation that evolved from research conducted during the 1970's particularly that carried out by Bloom and her associates (Bloom, 1970; Bloom & Lahey, 1978; Bloom, Lighbown, & Hood 1975) was selected. The progress made toward

achieving objectives 1 and 2 is reported in Chapter III. The orientation put forth by Bloom and associates views semantic or coneptual knowledge as more primary than linguistic form and requires that the investigator first classify the child's utterances according to a set of semantic categories.

Viewing semantic knowledge as more primary than linguistic form was particularly appealing for an analysis of the language being acquired by Black English speakers. Attempts to analyze, without a semantic component, the phonological and grammatical structures that characterize Black English have resulted in misleading and erroneous descriptions of the linguistic competence of Black English speakers. The absence of forms characteristic of Standard English has been taken by proponents of the deficit theory as evidence for the absence of the corresponding underlying semantic knowledge. Grammatical constructions that code knowledge of possession in Black English illustrate this point. Unlike Standard English speakers, Black English speakers may express possession without an inflectional marker, thus, utterances like "John hat" and "John house" are grammatically acceptable. Of course, it is fallacious to conclude that speakers who use these utterances don't have knowledge of the concept of possession. The use of a framework that views semantic knowledge as more basic than form will allow investigators to separate that which is general and universal in linguistic systems from that which is restricted and specific.

To accomplish objective 4, which requires an anaysis of the phonological data, the basic framework advanced by Ferguson and Farwell (1975) and Shibamoto and Olmsted (1978), and extended by Wolfram (see Chapter IV) was selected. The former researchers have proposed that in the early stages of phonological development (2 to 50 words), the word, as opposed to discrete sounds, is of particular importance. Following this orientation, the phonological analysis involved studying changes in words over time and the

effect of these changes on the child's inventory of sounds. Wolfram's extension of Ferguson and Farwell's basic framework involved adding a component which can systematically account for the extensive variability characteristic of developing phonological systems. The approach to handling observed variability is that originally formulated by Labov (1969) as the Variable rule, with subsequent revision throughout the last decade (Bailey, 1973a; Cedergren and Sankoff, 1974; Sankoff, 1978; Sankoff and Cedergren; 1981). This approach not only admits variability into a linguistic description; it also provides a perspective for viewing language change as a process that ideally goes from the categoricality of X to Y through a series of intermediate steps in which the fluctuation of X and Y is systematically ordered. Thus a dynamic model that incorporates variability as an integral part of the change is the orientation that guides the examination of the phonological data. The results of the first phase of this examination are reported in Chapter IV.

The methodology, which is discussed in detail in Chapter II, involved the collection of videotaped samples of spoken language from 12 subjects (18 months, 3 years, and 4 1/2 year old, both sexes) in their homes. Two hours of data were collected monthly from the subjects in the 18-month-old category, and 400 utterances (which required one to two hours of taping) were collected from the 3- and 4;6 year-old subjects. Videotapes recorded the details of the context, that is, the linguistic and nonlinguistic information that was available at the time the child's utterances were produced. The contextual data were used as evidence for classifying the subjects' utterances according to semantic categories. The data bank is one of the largest available on language development in young children. It contains approximately 300 hours

of videotaped samples and more than 75,000 utterances for analysis.

What is the rich and extensive data set likely to reveal? Following developmental psycholinguistic theory, the data is expected to show that at the semantic level the developing Black English system will resemble all other young children's systems. That is, the data will code basic coneptual categories like recurrence, possession, action, location, and the like. Indeed, this is what the first phase of analysis revealed (see Chapter III, Semantic Category Analysis). Furthermore, it is expected that subsequent analyses of the emerging Black English system will reveal a set of semantic categories that are dialect-specific or unique to the Black English system. Here the reference is to the semantic concepts underlying habitual invariant be and the remote time marker, stressed been. In the area of form, it is expected that the developing Black English system will resemble, in the early stages, other dialects of English; but in the later stages, its characteristic structural features should begin to emerge. Again this prediction was borne out by the data examined in the first analytical phase (Stockman & Vaughn-Cooke, 1981b).

Finally, it is anticipated that the extensive data set will provide some answers to the practical what-and-when questions regarding the development of Black English, questions such as when do working-class Black children begin to code location and what do the structures used to code this concept look like at different stages in their development? Answers to these and to many other fundamental questions should help researchers attain the critically important practical goal which is to apply the results of this investigation to linguistic problems in education, speech pathology, child development, and other relevant fields.

CHAPTER I

Background and Relevant Literature

An examination of the realtively large body of literature, which has focused on the linguistic abilities of working-class Black children, indicates that only a small subset of this research has been concerned with the acquisition and development of linguistic knowledge. Consenquently, major gaps exist in our knowledge regarding the evolution of language in these children. In this chapter we will critically evaluate the research that has been concerned with the linguistic abilities of working-class Black children, and discuss the impact it has had on language acquisition studies that have focused on this population.

The literature review will include studies that have and have not focused on language acquisition. The latter group of studies, which will be called "general language studies," includes those conducted from the language deficit, language difference, dialect proficiency, and language use perspectives. While these general language studies did not focus on language acquisition, it is necessary to examine them because of their impact on the types of language acquisition studies that have been conducted so far. The critical review of both the general language studies and the language acquisition studies will show how the available research indicates the need for a new framework in which to conduct future language acquisition research on Black children.

GENERAL LANGUAGE STUDIES

Deficit Studies

During the 1960's, the field of language acquisition exploded with fruitful theories and ground-breaking descriptions of the process by which

young children learn language. An underlying assumption of the research was that children throughout the world and of all social classes learn to code the universal and specific concepts expressed by their various mother tongues. It was taken as axiomatic that all children succeed, without formal intervention, in learning the rules which govern the phonological, syntactic, and semantic systems of their various languages.

It is difficult to comprehend how a group of researchers attempting to describe the language of working-class Black children could completely ignore the basic tenets of general child language acquisition research and claim that these children do not acquire language by interacting in their environments as other children do. It was proposed that, for working-class Black children, it is necessary to intervene and provide formal language instruction if they are to become linguistically competent. Developing the case for language intervention, Bereiter and Englemann (1966) reported:

> People who work with disadvantaged preschool children report a considerable number of children who at 4 years of age hardly speak at all. Language is apparently dispensable enough in the life of the lower class child for an occasional child to get along without it altogether. (p.31)

As a solution to the language learning problem of the lower-class child, Bereiter and Englemann developed "the beginning language program," which assumed no prior knowledge of language. In their description of the program, the authors noted that "the writers have attempted to make the beginning language program a truly beginning program. one that starts from zero, assuming no prior mastery of English" (p. 138). They state further that:

> The child is not merely learning how to express a concept in a new language or dialect. He is learning the concept through learning how to make the appropriate statements about illustrations and concrete objects. (p. 139)

Bereiter and Englemann's work and other works which present similar proposals have been called deficit studies (C. Deutsch, 1967; M. Deutsch, 1967). Given the far reaching effects of the deficit research, it will be instructive to re-examine in detail some of these studies. (Critical reviews appear in Baratz (1969a), Labov (1969) and Steffensen (1974).) Their theoretical claims and the evidence which served as the foundation for their claims must be reconsidered.

Two major theoretical claims were advanced by the deficit theorists. The first was that the young Black English speaker's model for language learning is deficient. M. Deutsch's (1967) description of the deficient model is echoed throughout the deficit studies. He notes:

> In the cognitive style of the lower-class family... language is used in a convergent or restrictive fashion rather than a divergent, elaborative fashion. An explanation or an imperative or a partial sentence frequently replaces a complete sentence or an explanation: if a child asks for something, the response is to frequently "yes," "no," "go away," "later," or simply a nod. The feedback is not such that it gives the child the articulated verbal parameters that allow him to start and fully develop normative labelling and identification of the environment. (pp. 358-359).

Commenting specifically on the grammar of the language being learned by working-class Black children Deutsch wrote:

> It is characterized by grammatically simple and often unfinished sentences, poor syntactical form, simple and repetitive use of conjunctions, the inability to hold a formal topic through speech sequences, a rigid and limited use of adjectives and adverbs, etc. (p. 367)

Once the claim that young Black English speakers' models for language learning are deficient was established, a second major claim was made, namely that working-class Black children must be formally taught to speak a language. Bereiter and Englemann (1966) were the major proponents of this claim. As they compared the process of language learning in working- and middle-class children, they made a case for this second claim. Bereiter and Englemann wrote:

> The culturally privileged child builds up his sentences by adding words to them: from "mommy read" to "mommy read book" to "mommy read me book" and eventually to "mommy, I want you to read me this book." The culturally deprived child grappling with such a sequence would probably start off with some amalgam like "re-ih-bu," with which he would then be stuck. The words "me" and "this" would be lost in noise, as they would be in any other sentences where they occurred, and thus it would be difficult for them ever to emerge as distinct, usable words. (p.36)

Bereiter and Englemann's position is that the absence of distinct usable words makes it impossible for the culturally deprived child to learn the generative rules which underlie syntax. They note:

> The speech of the severely deprived children seems to consist not of distinct words, as does speech of middle class children of the same age, but rather of whole phrases of sentences that

> function like giant words. That is to say, these "giant word" units cannot be taken apart by the child and recombined, they cannot be transformed from statements to questions, from imperatives to declarations, and so on. (p. 34)

Deutsch, supporting the position of Bereiter and Englemann, recommended that "expressive and receptive language training should be a conscious part of curriculum organization" (p. 367) for preschool working-class Black children. At the recommendation of the deficit theorists, language intervention programs were instituted throughout the country, and the principles advanced by the deficit research served as the foundation for most of these programs.

What kind of evidence would be required to support the deficit theorists' claims? Evidence for the first claim, that the young Black English speaker's model for language learning is deficient, should be based on a linguistic analysis of the phonological and syntactic structures utilized by speakers who exhibit adult competence in the child's environment. Valid statements about syntactic form and the grammatical complexity of a specific language cannot be formulated without collecting and analyzing examples of actual utterances used by the speakers of the language being examined. Evidence for the second claim, that young working-class Black speakers must be formally taught to speak a language, should be based on careful longitudinal observation of the linguistic behavior of children between the ages of about 18 months to 5 years. Without strong supportive data, the proposal that normal speakers must receive formal instructions in order to acquire their mother tongues can only be viewed as ludicrous.

Did the deficit theorists have the necessary evidence to support their claims? The obvious answer is no; but as noted earlier, their theories were accepted and propagated across a number of disciplines. The data presented as support for M. Deutsch's proposals came from a verbal survey which included a core sample of 292 first and fifth graders, children who have already completed the acquisition of the basic components of language. The sample included both Black and White, working-and middle-class children. The verbal survey contained a set of 52 "measures" which were purported to assess cognitive and language functioning. Upon closer examination, these measures were incapable of assessing the language of any child, middle- or working-class. For instance, one of the measures, the Peabody Picture Vocabulary Test (IQ and raw scores), failed all five of the linguistic guidelines developed by Vaughn-Cooke (1980) for evaluating language assessment tools; another measure, the Wepman Auditory Discrimination Test, penalized Black English speakers for responding in ways that would be predicted by their phonological systems. The meaningful rhymes score, which was based on the total number of meaningful rhymes given by a child in response to specific stimuli, and the Orientation Scale Test, which measured the child's "general knowledge" (e.g., what state does he live in?), also failed to meet accepted standards of good assessment instruments. Clearly, Deutsch's measures were incapable of providing evidence to support deficit theorists' claims about the language of working-class Black children. In order to describe a child's linguistic model, one would have to study that model, and likewise, in order to describe a child's linguistic system, one would have to study his system. The deficit theorists did neither.

Deficit studies are not language acquisition research for they do not attempt to investigate the emergence of language over time, cross-sectionally or longitudinally. It is important to note, however, that the deficit

studies, though linguistically naive, represent a highly influential phase in the history of the study of Black children's language. While it is now well known that their theories are unfounded and their descriptions are inadequate, this research cannot be ignored, for it has had a profound and lasting impact on practitioners who serve as teachers, psychologists, speech pathologists, and child development specialists for working-class Black children. But more important with respect to language acquisition research, the impact of the deficit studies went beyond the practitioner. The assumptions underlying these works also affected the researcher. Almost every language acquisition study that followed the deficit works has devoted too much space to defending what should be obvious, that the young Black English speaker has the capacity to learn a language.

Difference Studies

While the deficit theorists made no progress toward the goal of providing a description of the working-class Black child's linguistic competence, they were successful in stimulating other researchers to begin working toward this goal. Their untenable claims sparked a set of studies that defended the adequacy of the child's linguistic model and his capacity for language learning. These latter studies (Baratz, 1969a, Stewart, 1969b) argued forcefully that the Black child's language was different rather than deficient. Baratz, one of the first to present this argument wrote:

> Black children...speak a well-ordered, highly structured, highly developed language system which in many aspects is different from Standard English. (p. 94)

A major goal of the difference studies, which were influenced by the sociolinguistic descriptions of Dillard (1972), Fasold (1972), Labov (1969a), Stewart (1969a), and Wolfram (1969), was to describe the rules of the child's

model that differed from Standard English. The counterclaims of the difference studies matched those advanced by the language acquisition researchers. It was proposed that the linguistic systems of Black English-speaking children, like the systems of all other children in the world, are indeed systematic, structured, governed by rules, and adequate as communication systems. These enlightened linguistic proposals had a positive effect on practitioners and helped to reverse some of the thinking stimulated by the deficit studies.

Evidence for the claim that working-class Black children's language is different rather than deficient was based on structural descriptions of the fully developed systems of competent speakers. These descriptions which revealed grammatical and phonological differences between Black and Standard English provided sufficient support for the difference hypothesis. It is important to note, however, that, while theoretically enlightened, the difference works were not language acquisition studies in that they did not focus on the development of language over time, and thus could make no claims about the process by which young children acquire their linguistic systems.

Dialect Proficiency Studies

The dialect proficiency proponents adopted the theoretical position of the difference advocates, and the claim that the Black child's language was different rather than deficient was restated in numerous investigations across the country (Baratz (1969b); Copple & Susi (1974); Hall, Turner & Russell (1973) Ramer & Rees (1973)). These studies went beyong the general goal of arguing for the adequacy of the working-class Black child's linguistic system. They were also concerned with determining the child's proficiency in Black English and in Standard English. However, these studies concentrated on the child's knowledge of only those grammatical rules that differ in Standard and Black English.

The dialect proficiency studies presented empirical evidence for the difference hypothesis, which generally took the form of production data

obtained from repetition tasks. Baratz's "A Bi-Dialectal Task for Determining Language Proficiency in Economically Disadvantaged Negro Children" provides a good example of the kind of evidence these studies presented. The purpose of the Baratz study was to "compare the language behavior of standard and nonstandard speakers when they are asked to repeat standard and nonstandard sentences" (p. 892). The subjects, Black and White third and fifth graders from an inner city and a suburban school, were administered a sentence repetition test which contained 15 sentences in Standard English and 15 sentences in Black English. The data were analyzed to determine the subjects' responses to a variety of standard and nonstandard structures. The results were predictable. Black English speakers were able to produce nonstandard structures better than standard English speakers and produced systematic nonstandard patterns when responding to standard sentences. Baratz's findings indicated that the converse was true for the White subjects who performed significantly better on the standard structures and exhibited systematic standard patterns when responding to the nonstandard sentences. As the Baratz study illustrates, the dialect proficiency research was not based on longitudinal data. It focused instead on the linguistic abilities of older children; thus the dialect proficiency research, like the difference studies, could make no claims about the process by which young children acquire their linguistic systems.

Language Use Studies

The final category of general language research includes a small, but growing set of studies that has focused on the use of language by Black children (Hall & Guthrie (1979); Horner & Gussow (1972); Mitchell-Kernan & Kernan (1977)). The major claim of these studies is that knowledge of a language involves knowing more than the rules which generate grammatical and phonological structures. A speaker must also learn the rules which govern the use of such structures in his speech community. Informed by the theoretical position of the difference studies and the results of the

sociolinguistic research on adult Black English, the language use research exhibits an enlightened position regarding dialect variation.

Evidence for the language use studies came from spontaneous samples of speech. In this regard, these works differed markedly from the earlier research; they were based on primary language data. Mitchell-Kernan & Kernan (1977) provide an illustration of the data set that served as evidence for knowledge of language use. The purpose of the Mitchell-Kernan & Kernan study was to examine some aspects of the use of directives (can I speak to her) by children who ranged in age from 7 to 12 years. Specifically, the researchers examined the social distribution of directive types used by children and the relationship between particular directives and broader interactional goals. Data were collected in role-playing and spontaneously occurring speech situations. The results indicated that the children had acquired all of the conventional forms that characterize directives in the adult system. In addition, they showed an awareness of some of the social factors that help to determine which directive form should be used on a particular occasion.

Mitchell-Kernan and Kernan's study represents an important expansion of the research on the Black child's language, for it is one of the few studies that attempts to account for knowledge of language use in this population of children. It should be noted, however, that the goal of this work was not to reveal anything about the development of rules of language use over time.

LANGUAGE ACQUISITION STUDIES

Among the studies of the language of working-class Black children, only a small subset of this research has investigated the development of language over time. Some of the major developmental or language acquisition

studies were conducted by Steffensen (1974), Stokes (1976), Reveron (1978), Cole (1979) and Kovac (1980). Steffensen investigated the language of two boys, one developing over the period from 20 months to 26 months, and the other, the period from 17 months to 26 months. The study focused primarily on the emergence of Black English grammatical features. These include the plural and possessive inflections, pronominal case, copula and auxiliary verbs, third person singular, and past tense inflections. When those aspects of Steffensen's subjects' language that should have exhibited features of Black English were examined, there were virtually no differences between the Black English speaker's development and that of children acquiring Standard English. This finding is not surprising since Steffensen's subjects were at a point in their development where it was impossible to separate dialectal features from developmental features in their language.

For example, constructions without copulas and auxiliaries are grammatical in Black English. It is acceptable to say she pretty and she sleeping. These kinds of constructions also occur in child language; but if the child is learning Standard English, constructions without copulas and auxiliaries will be replaced by constructions that exhibit these forms Brown (1973). If one studies a Black English speaker for only a short period of time, as Steffensen did, and if one focuses on the very early stages in the speaker's development, then it will be impossible to distinguish his system from the early stages of the development of Standard English. However, if the study spans a longer period of time, for example 12 to 18 months, as opposed to six months, one should begin to see structural differences. For the Black English-speaking child, a maintenance of constructions without copulas and auxiliaries should be seen, but for the Standard English-speaking child, a loss over time of constructions without copulas and auxiliaries should be observed.

Stokes, using elicited data, examined the ability of 36 children between the ages of 3 and 5 to transform affirmative constructions to negative constructions. Her general findings indicate that nearly all of the children, including the three-year-olds, had acquired some of the rules for negating affirmative constructions.

Reveron examined the occurrence of plural, possessive, past tense, and third-person singular morphological markers in SE and BE in response to Berko-type elicitation tasks. The 80 children were evenly divided by social class (40 each at the middle and low SES) and age (10 per age at 3, 4, 5, and 6 years in each SES group). At all ages, there were children whose responses corresponded to the expected pattern of morphological markers for SE and BE, though the rank order of the four morphological markers with respect to the frequency of expected use in the children's responses varied with age.

Cole examined the elicited speech of 60 three, four, and five-year-old girls to determine whether their responses exhibited 18 syntactic features that are characteristic of Black English. These included:

> pluralization, possession, past tense, copula and auxiliary verbs, third person singular, past tense copula, present tense concord, indefinite article, reflexive pronoun, demonstrative pronoun, personal pronoun, first person future, multiple negation, embedded question, go as copula, distributive aspect, remote completive aspect, at in content questions and hyper-correction. (Cole, 1979, p. 55).

Cole's findings revealed that each of the 19 features was exhibited in varying degrees at each age level, with only one exception noted(the second person plural form, you all or yall, was not exhibited in the three-year-old group.) Cole also found that the majority of grammatical forms studied

were used more frequently as age increased.

Kovac, using spontaneous speech samples from 26 three-, five-, and seven-year-old middle- and working-class Black children, investigated the acquisition of two variable features, auxiliary and copula, within the framework of variation theory (cf. Cedergren & Sankoff (1974); Labov, (1972). Her findings indicated that only the seven-year-olds exhibited the variable use of copula and auxiliary forms that is characteristic of adult Black English systems. The findings for the three-year-olds indicated that it was impossible to separate developmental absence from possible incipient deletion of the copula and auxiliary structures.

While the above studies have helped to lay the foundation for describing the developing Black English system, they exhibit a major weakness that should be avoided in future research. They do not reflect the current theoretical frameworks, methodologies, and research questions that have evolved from the rich body of research in developmental psycholinguistics. One of the main methodological approaches used in developmental psycholinguistics has been the longitudinal study of children whose age at the beginning of observation is 18 months or younger. Studying children at this age level, psycholinguists during the 1960s were able to provide cross-linguistic descriptions of two-word utterances, the foundation of complex syntax. Although psycholinguistic research has now advanced far beyond describing two-word utterances, it has still placed a priority on studying the emergence of specific kinds of linguistic knowledge to reveal the processes and strategies that young children employ when they engage in language learning. The emerging system provides a foundation for understanding the process by which the child's system expands to include the later-learned, more complex features of language.

In contrast to the psycholinguistic research, language emergence per se has not been a priority in the Black English language acquisition research. Descriptions of the above developmental studies indicate that investigators have not asked the general question, "how does the Black English system evolve and develop over time?" Consequently, such related, specific, but fundamental questions such as "when do Black English speakers first acquire two-word utterances?" have not been systematically investigated. One can hypothesize that working-class Black children acquire two-word structures around the same time as other children, but clearly this hypothesis needs to be empirically validated.

If studying the emerging language system of the child has not been a priority for language acquisition research on working-class Black children, then what has? The major priorities have been studying those structures that differ from Standard English and defending the adequacy of Black English as a communication system. These priorities reflect the impact of the theories advanced by the deficit and difference studies. Developmental researchers could not ignore the claims of the deficit theorists. Thus, counterclaims were advanced in an attempt to reverse them. These were explicitly stated in the results of the language acquisition research, particularly that conducted by Cole (1980) and Steffensen (1974). Cole maintained:

> The most telling finding of this study was that Black English as used by preschool children develops in a systematic manner. This finding in general is not likely to be surprising to those who have regarded Black English as a regular linguistic system which can be acquired like any language. Nevertheless, the persistence of the deficit theory and the attitudinal stigma commonly held toward this variety

evidences the noteworthiness of this finding. (p. 107)

Steffensen went beyond the presentation of a general counterclaim, devoting a full chapter of her dissertation to a detailed review of Bereiter and Englemann's book, Teaching Disadvantaged Children in the Preschool. She wrote, "The existence of such a book...is in itself sufficient motivation for a dissertation committed to an empirical study of the dialect...of young Black English speakers" (p. 20)

A particularly telling example of the influence of the deficit studies on the researcher can be found in Horner and Gussow's investigation, although their work is not developmental. After collecting two days of audio recorded data from two three-year-olds, Horner and Gussow made some generalizations about the households of their subjects. According to the investigators, "the first (generalization) was that these people talked to each other a lot" (p. 168). Commenting on their unexpected finding, the researchers pointed out that "so pervasive has been the notion of the 'nonverbal' poor that the universal first reaction to the tapes was that middle-class families had been accidentally selected" (p. 68). Here, then, is striking evidence that the deficit studies affected not only the practitioner, but also the researcher. Deficit studies compelled scholars investigating the language of Black children to waste valuable time stating and restating the obvious, that is, people talk to the working-class Black child, and that his language, like all languages, is systematic, governed by rules, and adequate as a communication system.

Consider now the impact of the difference studies, whose major goals included the study of those structures in Black English that differ from Standard English. Reflecting the impact of the difference studies, the language acquisition research described above focused exclusively on

structures that differ from Standard English. Steffensen (1974) used an analytic framework that evolved from psycholinguistic research. However, the focus was not on the emergence of structures that provide the foundation of the Black English system (e.g., one-and two-word utterances). Rather, it was on those later-acquired structures that specifically differ from Standard English and that must be added to the foundation. To understand how working-class Black children acquire the total Black English system, not just those features that differ from Standard English, the priority motivated by the difference works must be abandoned.

The fascination with structures that differ from Standard English has prevented language development research on Black English from making the theoretically fruitful shift away from simply describing dialect-specific linguistic forms towards positing semantic categories that apply at a universal level. An interest in the child's semantic knowledge that dominated developmental psycholinguistic research during the 1970's is not systematically reflected in the Black English language acquisition research. Nor is the new methodology that requires detailed contextual information to help determine the semantic content. Scholars working on the acquisition of Black English will be able to expedite developments in their field if they revise their research goals to converge with the fundamental goals that have emerged from the latest advances in developmental psycholinguistics. The following basic guidelines can provide theoretical and methodological direction when revising the goals for language acquisition studies on working-class Black children.

1. Narrow, unidimensional frameworks which focus only on forms that differ from Standard English must be abandoned, and a multidimensional framework which views the childs linguistic competence in terms of content, form, and use interactions must be adopted.

The details of the multidimensional approach are presented in Bloom and Lahey (1978) and in Bloom, et al., (1980). The following example of a child's utterance and the context in which it was produced illustrates the descriptive goals of this approach.

Context	Child's Utterance
(mother and child playing with a race track and cars)	
Mother: Let me have a car; I want to play too.	
(D.D. takes one of two cars and holds it close to his chest)	This car mines
Mother: Okay then, I'll take the other one.	

In the above example, a form analysis would involve classifying the specific structures according to syntactic categories, and specifying the rules for combining structures in the observed utterance; but instead of focusing solely on the syntax of this car mines, as the unidimensional form approach would require, the investigator using the content, form, and use framework must consider what the utterance means and how it is used. By considering both the structure of the child's utterance, and the context in which it was produced, in particular, the child's nonlinguistic behavior, the investigator can specify the semantic content, or the concepts expressed by the utterance. In the above example, the occurrence of the possessive pronoun, mine and the nonlinguistic act of taking one of two cars and holding it close to the chest, provide evidence that the utterance expresses a possessive state. The pragmatic description required by a multi-dimensional approach would reveal the function of the utterance in the child's language. For example, the utterance above functions as an assertion.

The content, form and use approach is superior to unidimensional ones, not only because of the comprehensive description it provides, but also

because of its greater explanatory power. The study conducted by Bloom et al., 1980, illustrates this critical feature of the framework. These investigators reported that the order of acquisition of a subset of linguistic forms (syntactic connectives which include conjunctions, wh- pronouns and relative pronouns) observed in complex sentences is affected by the complexity of the underlying semantic notions being coded. By utilizing a framework which allowed them to examine the interaction of content, form and use, Bloom et al. were able to provide an explanation for the order of acquisition of syntactic connectives. The researchers examined an extensive set of these forms, but for illustrative purposes, we will restrict our discussion of content/form interactions to the conjunctions, and and then.

Specifically, the results of Bloom et al., revealed that the connective form and, which codes an additive semantic relation (e.g., you do one and I do one), is learned before the form, then, which codes a temporal semantic relation (e.g., I going this way to get the groceries then come back). To account for the earlier occurrence of and, the investigators appealed to research which has shown that additive relations are conceptually less complex than temporal ones in that "children learn to form collections of things (e.g., Sinclair (1970) before they learn to form series of things that are ordered relative to one another (e.g., Inhelder and Piaget (1964)." p. 258. These observations provide evidence that and does not occur arbitrarily before then; its earlier occurrence is motivated by the underlying content that is being expressed.

In addition to revealing the interaction of form and content, the Bloom et al., study also revealed the interaction of use with form and content. This was done by examining the occurrence of complex sentences in two types of cohesion relations in discourse. The first type was

intraspeaker or child-child cohesion. In this pattern the two clauses expressing a complex meaning relation occurred either within one utterance, or across two consecutive utterances produced by the child (e.g., and there's my eye/and there's my feet).

The second type of cohesion relation consisted of the interspeaker relation, which includes both adult-child and child-adult-child patterns. For these patterns "the two parts of the semantic relation before and after the connective occurred across two or more different speaker turns... e.g., #Maybe he'll ride the horse #yea, when he come in#." (Bloom et. al., p. 253).

The findings indicated that the two clauses of complex sentences occurred most often in the child-child cohesion pattern, irrespective of the semantic relation being expressed. Whenever the two clauses of complex sentences occurred in the adult-child or child-adult-child patterns, they expressed most often causality and adversative relations. This latter interspeaker cohesion pattern increased developmentally; and "appeared to reflect the children's increasing ability to participate in discourse, using newly or already learned linguistic forms, rather than the learning of linguistic forms through discourse." (p. 258)

It is important to point out here that only a multidimensional approach could have captured the complex interaction between form, content, and use in the developing linguistic systems examined by Bloom et. al. Other studies which provide sharp illustrations of the explanatory power of multi-dimensional frameworks include Limber (1976), Johnston and Slobin (1979), and Smith (1980).

While the framework allows the investigator to examine the child's language in a very comprehensive way, researchers would still be expected to select a specific dimension of language as the target of study, for

example, in Bloom, et al., referred to above, the specific dimension was form (syntactic connectives) which was analyzed in relation to content and use. Careful consideration must be given to selecting a dimension for study when investigations represent the first attempt to establish a knowledge base on a particular language variety. We propose that the content or form dimension be given priority in initial research. Irrespective of the specific dimension selected, a multidimensional approach should still be employed.

An explanation is in order regarding the recommendation that content/form interactions should serve as the focus of the first analytical phase. Our rationale for this recommendation was motivated by both theoretical and practical concerns. With respect to theoretical concerns, we have proposed that the content/form interactions of children's utterances should serve as the target of initial investigations, not because we view pragmatic knowledge as secondary, but because at this point in the study of child language, greater theoretical depth has been achieved in the domains of content and form than in the domain of use. This is evidenced by the larger body of literature resulting from a longer period of study in the former two areas. This literature includes an impressive subset of research on the development of content/form interactions in English, but more important, it includes a growing set of cross-linguistic studies which have investigated the interaction of content and form, but not use, in emerging linguistic systems. Here we can refer to Kernan's 1969 analysis of Somoan children, Bowerman's 1973 analysis of Finnish children, Johnston and Slobin's 1979 comparative investigation of English, Italian, Serbo-Croatian and Turkish, and Dromi's 1979 and Berman's 1982 multi-focused analysis of Hebrew. An important indicator of the adequacy of a theoretical framework is its

ability to reveal that which is universal, fundamental, or basic in human languages. Theories of content and form have been subjected to more cross-linguistic testing than those of language use, and for this reason the former are presently more comprehensive, and exhibit greater predictive power.

With respect to practical concerns, we have suggested that the goal of initial investigations should be to reveal the breadth of the child's knowledge of content/form interactions. Such information could be used in clinical and educational assessment. For example, if a practitioner knows what kind of semantic content children should exhibit at different stages in their development, then he or she would be in a position to make principled decisions regarding the goals of assessment of language teaching for this fundamental component of the child's language.

2. <u>The methodology must include a systematic examination of contextual information, thus it must be sensitive to the socio-cultural context in which working-class Black children's language is learned and spoken</u>.

The study of children's language within the expanded and dynamic framework of form-content-use interactions requires the use of data collection methods that reflect sensitivity to the context in which language is spoken. Context, in its narrowest sense, refers to the particular situations in which spoken language may be observed, including the physical setting for verbal exchange, the nonverbal and verbal behaviors of the participants, topics, role relations, etc. The most obvious way in which the methodology can reflect a sensitivity to socio-cultural context is in the observation of the language behavior that characterizes routine social interactions. The methodology for most of the studies of working-class Black children's language did not systematically take context into account. Because researchers worked mainly within unidimensional frameworks that focused only on linguistic

form, they assumed that their methodological approaches did not require a systematic examination of contextual information.

The systematic use of contextual data, which began in the seventies, represented a major methodological shift in the mainstream child language research. This shift was motivated by the requirements of the new theoretical framework which viewed linguistic form in relation to semantic and pragmatic knowledge. The detailed analysis of contextual data was shown to provide important evidence for the meaning underlying early utterances (Bloom (1970), Bowerman (1973) and for the rules underlying early use of language (e.g., Bates (1976)). In order to record the context, investigators employing the new method, relied on naturalistic field sampling strategies to observe the child's language in various social situations. We will now consider in greater detail, the requirements of this strategy.

First, naturalistic data sampling requires more than a spontaneous speech sample. It requires, in addition, that the sample be collected in social contexts in which language is routinely used. Language is not routinely used to talk to investigators in small rooms or laboratories. It is used in the home, school, or on the community playground to talk with familiar family members and playmates about shared experiences in the speaker's culture. More specifically, language is used to request food, report ailments, ask questions, tease, play games, etc. Such communication acts cannot be recorded unless language is observed in the context in which it is routinely used.

Second, naturalistic data sampling requires that the investigator record the most relevant verbal and nonverbal details of the context in which language is spoken. This may include what was said before and after each of the child's linguistic responses, what the child and others were doing

at the time of a response, who the participants were and their relation to the child, etc. Descriptive detail regarding the context may be recorded, using on site hand written notes. But given the dynamic and complex nature of the communicative event, one simply cannot expect to achieve the same kind of descriptive accuracy as that provided by the use of audio or combined audio-visual recordings, and it is important to note that combined audio-visual records are by far the superior recording method. For example, it can reveal extensive nonverbal evidence which can be used to help interpret the content underlying children's early forms. The opportunity to actually observe that a child always selects the same toy object from among a set of toys when using a given possessive form like 'My or yours' in a group or dyadic interaction, provides supportive evidence that the child's linguistic forms are indeed referring to the concept of ownership.

Third, a naturalistic language sample should be obtained ideally, without speaker's knowledge that his or her language is being observed (see Labov (1972) for a discussion of the observer's paradox), since knowledge of this alone alters the normal situation and consequently, could influence the kind of language output. But it is impossible to eliminate the effect of investigator presence altogether if first hand observations are to be made, especially when audio-visual equipment is used to record data. This barrier, however, can be minimized to some extent if the investigator assumes the role of participant/observer, a strategy that has been effectively used by ethnographers. Using this strategy, the investigator seeks to become a natural extension of the child's communicative environment and to experience directly the social interactive effects of his language

with that of the informants. This could require relatively long-term interaction with informants even prior to data sampling. In the participant/observer role, however, the investigator does not always structure the interaction and attempts to control activities as little as possible.

We propose that naturalistic data sampling is the preferred mode of collecting language data, particularly for language varieties on which little or no data exist, for this technique makes few assumptions about what the relevant features of the language behavior are, and thus leaves open the possibility to discover features never before revealed. Our position is that formal language elicitation procedures (e.g., Berko-type tasks) constitute the least preferred mode of data gathering as a starting point in the study of working-class Black children's language. As noted earlier, these procedures generally do not require the use of spontaneously generated language, or the use of language in the natural context of social interaction. An equally important shortcoming is the fact that elicitation tasks must be based on some presupposition about the relevant features for language study, and these can only be revealed by prior research. For example, the use of elicitation procedures modelled after Berko, not only limits observation to the frequency with which a morphological marker is present or absent, it reveals only those aspects of morphological knowledge (e.g., knowledge of forms which code past tense) that are already built into the task, and that have been characterized by prior description. One has to already know, for example, that past tense can be marked with the 'ed' form as in 'walked', and 'laughed' before designing a task to elicit such markers. Unfortunately though, the relatively small data base that exists on working-class Black children's language includes studies that have employed elicitation tasks (Stokes (1976); Reveron (1978); and Cole (1979).

If a naturalistic sampling approach is to be used to obtain a representative sample of children's language, then the investigator must have prior knowledge of the range and types of natural and typical situations in which children talk as well as the general kind of social factors that impact on the frequency and quality of talking. This requires investigator knowledge of and sensitivity to the larger cultural context in which children's language is learned, spoken and used. By larger cultural context is meant the shared beliefs and values of speech community that dictate the conditions under which verbal communication occurs as well as their respective social codes of interaction.

Knowledge about a group's communication patterns can be acquired either by indigenous or prolonged contact as a participating member of the community group. Information can be further supplemented by formal ethnographic descriptions of speech communities such as those provided by Blount (1969) of Luo speakers, and Albert (1972) of the Rundi speakers.

The need for the investigator to know the cultural patterns governing communication in particular groups is especially important to emphasize here because the formal study of Black people in general and of their language in particular, has been historically undertaken by scholars who were not indigenous to the culture of the people. In the absence of investigator sensitivity to the cultural context in which language behavior is routinely used, several kinds of problems can arise that prevent one from achieving the general goal of providing an accurate picture of the child's developing linguistic knowledge.

First, one could fail to obtain a sample of verbal behavior or only a limited sample may be obtained. For example, the erroneous claim that working-class Black children were nonverbal (see e.g., Bereiter & Englemann, (1963) reflected insensitivity to the way in which these children were

likely to behave verbally when interacting with white interviewers, particularly in atypical formal communicative situations. The limited sample obtained by Blount (1969) of Luo speaking children in Kenya illustrates the effect of cultural attitudes toward strangers on the quantity of children's output. Using adult strangers to elicit language samples, even in the familiar homestead setting, only 200 utterances overall were collected from more than half a dozen children in a period of eight months. This stands in sharp contrast to the 400 utterances that we collected monthly from one child in two hours.

Second, in the absence of knowledge about the socio-cultured patterns of a group, the investigator may be unable to identify factors that are irrelevant to an adequate description of the language patterns of a group of children. With respect to this point, birth order though often controlled in studies of language development, may provide an unnecessarily restrictive condition for the description of working-class Black children in some cultural settings. The common practice of observing first-born children in child language research has been based on the assumption that the mother is the primary source of input to the first child--an assumption that is well founded in middle-class settings where the mother generally serves as primary caretaker in an autonomous family structure. But, this assumption does not hold for those working-class Black children, who, irrespective of birth order, often live in an extended family environment that includes more than one caretaker, and functional sibling interaction with cousins, aunts, and uncles of the same age. For example, all eight of the first-born children included in our investigation had at least one other caretaker in the home, besides the mother. The delegation of early child care to family members other than the mother is attested among Luo and Samoan speaking communities, (Blount (1977) and in the Kokwet Kenyan Village (Harnkess (1977)).

Ethnographic evidence that cultual groups are not homogeneous with respect to the type of social factors that impact on language behavior and variation, suggests that one cannot expect to take his or her own cultural orientation to language and categorically apply it to the study of language behavior in other groups without danger of misrepresentating the speakers in question.

These two basic guidelines provided the theoretical and methodological direction for the Developmental Study of Black English. The next two chapters reflect specifically the requirements of these guidelines.

CHAPTER II

Method and Procedures

Description of Subjects

Samples of spoken language were collected longitudinally from twelve Afro-American preschool children who presented no obvious physical, emotional or intellectual deficit insofar as this could be determined from medical and school records, parents' case history reports, and the investigators' informal observations of their behavior.

Age and Sex Distribution. The twelve children were evenly distributed in three age ranges each of which spanned the 18 month data collection period. Four children were represented in the age ranges of 1:8 to 3;0 years, 3;0 to 4;6 years, and 4;6 to 6;0 years, with an equal number of males and females in each group. A thirteenth child was added to the group in the third sampling period. The 4;8 year male was viewed as a control subject for the oldest age group since one of the males in that group was enrolled in speech therapy after the onset of the data collection.

Four children (two males and two females) per age group were the minimum number needed to isolate 'sex' as a possible variable in accounting for expected individual differences in linguistic skills among children of the same age. Longitudinal observation of children at different age cross-sections also provided data for examining language development over a relatively long time period, which altogether encompassed 1;6 to 6;0 years of age.

Language Background and Status. The children were all native to the U.S.A. and monolingual speakers of English. They lived in homes and

communities of Washington, D.C. whose residents were predominantly Black and monolingual speakers of a variety of English that exhibited one or more characteristic features of 'Black English' as summarily described in Stewart (1969), Labov (1966), Wolfram (1969), Fasold (1972), Wolfram (1976) and Rickford (1975). The children's parents were native to the Washington D.C. aarea with one exception, and all had resided in the area at least five or more years prior to the study.

At the onset of data collection, the three groups of children were at 1;6 3;0, and 4;6 years of age. At 1;6 years, 69 to 100 percent of the children's language responses consisted of single words. At the two older ages (3;0 and 4;6 years), the children spoke primarily in multiword utterances with no equivalency criteria of length or complexity imposed on those in a given age group.

The mean length of utterance (MLU), typically used as an index for equating children's language development, was not tabulated for two reasons. First, MLU does not appear to be an adequate index of language development after utterances exceed three or four words (Bloom and Lahey, 1978), which was the case for all the children included in this study except those at 1;6 years. Second, MLU does not appear to adequately capture the complexity of Black children's language since its conventional computation is biased toward language specific features of mainstream varieties of English (See also Brown's 1973 discussion (p. 71) of problems encountered when the MLU was calculated for German speaking children).

Socio-Economic Background. All the children included in the study came from working-class backgrounds as judged by one or more conventional indices such as education, occupation, and residency (Wwarner, (1949) Billingsley (1968)). Of the twelve households involved in the study, 75 percent were headed by a single parent, the mother. Two-thirds of the

families were economically dependent on government subsidy and those who were employed, held unskilled or semiskilled laboring jobs. Two-thirds of the mothers had not completed high school and only three had attempted any training beyond high school. Ninety percent of the families lived in rented housing--typically sharing the living space in an extended family arrangement.

Children from working-class backgrounds were selected for study because of the reportedly high relationship between working-class status and the presence of nonmainstream dialect speech patterns, Wolfram (1969), Fasold (1972), Labov (1972). Consequently, Black working-class children were judged to be at higher risk than those of nonworking-class status for inappropriate language assessment due to the lack of inadequate normative data.

Birth order. Eight of the twelve children were first born and/or only children. The number of such children was distributed across the three age groups. Birth order was not controlled when selecting the children for the study though in language acquisition research, it is common practice to do so by restricting observations to the first born child. The early language learning environment is assumed to differ for the first born child and that of later born siblings since in the former case, the mother as primary caretaker, is often the main source of language input and modeling for the child. The same assumption, however, does not hold for many working class Black youngsters who often live in an extended family environment that includes more than one caretaker and functional sibling interaction with cousins, aunts, and uncles of proximal ages even when the child is a first born or only child. The homes of all eight of the first-born children included in this study had at least one other caretaker besides the mother and nonsibling playmates of proximal

ages. Consequently, birth order was not considered to be a critical variable in selecting children for the study.

The Subject Selection Process

The children were selected from a group of children who met all subject selection criteria following a two-step screening process as described below. As the subject description in the previous section suggested, we sought working-class Black youngsters who were (1) healthy and developing normally; (2) 1;6, 3;0 or 4;6 years (+2 months) by the time data collection began; (3) native to the U.S. and monolingual speakers of English; and (4) residing in communities in which characteristic Black English features were spoken. In addition, we sought youngsters who would be available for the eighteen months of data collection.

To identify children who met the above criteria, the children were first screened from day care centers in Washington, D.C. Federally subsidized programs such as Head Start were particularly ideal for selecting working-class children since they service only those families who meet government requirements for indigent status. A standard checklist questionnaire (see Appendix A) was distributed to appropriate personnel with instructions to provide the relevant information on every child enrolled in a given class. The completed questionnaires were returned to the investigators, though the children's identification remained anonymous. The questionnaires were then reviewed by the investigators who identified potential children for the study.

As a second screening step, interviews were then scheduled with those parents of potential subjects who consented to participate in the study if their children were selected. (See parent consent form in Appendix B.)

The parent interviews were conducted by the investigators in each child's home using a standard case history form. The interview provided the opportunity to (1) further assess the socio-economic and language backgrounds

of the children's homes and communities (2) obtain a more detailed history of the children's physical, psychological, and social functioning, and (3) determine their availability for the duration of the study. In addition, it provided the investigators an opportunity to make informal observations of the children's language and nonlanguage behavior in naturalistic situations.

The twelve children chosen for study were more or less randomly selected among approximately twenty-five potential children who met all selection criteria after the parent interview. Appendix C shows the letter of agreement, which was sent to the parents at the beginning of the project. Each family received a modest cash stipend during every month of participation in the project.

Data Collection Procedures

Samples of spoken language were collected from each of the twelve children at regular intervals across an eighteen month time period. The data were collected by the principal investigators between December 1980 and June 1982. Prior to the first month of data collection, the investigators visited the children in their homes over several weeks in order to minimize the "stranger" effect on subsequent interactions during language sampling.

Frequency of Language Sampling

Once the language sampling began, observations of the children's language were also made during regular visits to their homes. Language samples were obtained every four weeks from those eight children in the age ranges of 1; to 3;0 years and 3;0 to 4;6 years. For children in the oldest group (4;6 to 6;0 years), language samples were obtained once every four weeks for the first six months of data collection, and thereafter at intervals of six to seven weeks.

The Conditions of the Language Sampling

Field visits were made by a team of two persons that always included one of the principal investigators. During a field visit, one person operated the camera while the other person was available to oversee the language sampling event. The child's language was recorded during routine play activity involving social interaction with children and adults, including the investigator. The child typically played with toys from a core set which was provided and used with all the children to facilitate comparability of data among children at least with respect to what they talked about. The core of toys included, for example, a doll house, basic house furniture, a pliable miniature family, assorted wooden blocks, a ball, a large doll with clothing, balloons, soap bubbles, etc. Toys were used that required the child to engage in some type of activity or action. However, the child's play activity was not restricted to the core toys and in fact, play activity involving objects that were a part of the child's own home environment was strongly encouraged. During the sampling, little or no structure was imposed; the child's actions were primarily guided by his/her own interests.

The Recording of the Language Sample

The entire language sample was recorded using the most recent audio-visual technology. The field equipment consisted of (1) portable color camera, (JVS-G-71US) equipped with view finder and automatic light control and (2) a video-cassette recorder (Sony SLO-323). Video clarity was maximized by supplementing home lighting with high voltage lamps where required. Further, a portable television monitor (Sony KV1217) provided continuous onsite feedback about video quality. A tie tack microphone (ECM-31), frequency response range of 50 to 13,000 Hz) was attached to the child's clothing-typically the collar, at distances permitting clear and undistorted audio quality. The microphone and camera cables permitted the child to move

freely within an eighteen foot area.

Audio-visual recording of data is required for adequate observation of the contexts in which language is used. The use of contextual data has represented a major methodological advancement in the study of child language in that it has permitted investigators to make stronger inferences about the kind of meaning and concepts, which underly young children's language forms. Context includes what was said before and after each of the child's linguistic responses, what the child and others were doing at the time of responses, who the participants were and their relation to the child, etc. Descriptive detail regarding the context of language may be recorded using on site hand written notes as was used early on. But, given the dynamic and complex nature of the communicative event, one cannot expect to achieve the same kind of descriptive accuracy as that provided by the use of audio recordings or the more superior combined audio-visual recordings. Audio-visual records reveal extensive visual evidence that can be used to help interpret the content of children's forms. The opportunity to observe, for instance, that the child always uses the word 'in' when placing an object into a three dimensional object having contained space, provides supportive evidence that the form 'in' refers to a kind of locative relation.

The Length of the Language Sample

The length of the sample varied with the child. For the four youngest children, a two hour language sample (each hour generally obtained on successive days) was obtained in every sampling period irrespective of the amount of the child's output. For the eight older children, the sample length typically varied from 1 1/2 to 2 hours, given the goal of eliciting a minimum sample size of four hundred responses (excluding repetitions, imitations, etc.). Of course, what constitutes an adequate sample of a child's language at any given observation point is a debatable issue. We relied on

the recommendation offered by Bloom and Lahey (1978) that 200 utterances were minimally adequate for clinical analysis of a language sample. Thus 400 utterances were regarded a reasonably minimum sample size. Moreover, this number or utterances could generally be elicited from a child within one to two hours.

Description of the Data Base

The data base consists of audio-visual records of spoken language samples obtained at four to six week intervals from each of the twelve children over eighteen months. In all, this cross-sectional/longitudinal data base includes approximately three hundred hours of data and more than 75,000 utterances for analysis. The data base is judged to be sufficient for undertaking the kind of developmental description of the children's language that can serve as the foundation for a large scale norming study.

Preparation of Data for Analysis

Before the data could be analyzed, the language responses naturally had to be extracted from the audio-visual tapes on which they were stored. Orthographic representation of the utterances spoken by the child along with the relevant contexts, provided sufficient input data for the semantic/syntactic analysis. In addition, phonetic representation of the utterances was required as input data for the phonological analyses. Thus, basic preparation of the data for analysis was conducted on two levels, each requiring separate passes through the data. The data preparation phase was extremely tedious and time consuming, each phase requiring as much as ten hours per each hour of data to complete. A description of the general procedures involved in each phase of data preparation follows.

Orthographic Representation of the Data

The goal of this task was to provide a written record of the words and word combinations spoken by the child during a language sample. This task

Data Analysis Plan

Selection of the Sampling Interval for Analysis

As aforementioned, the general goal of the language analysis is to describe the evolution of the children's linguistic knowledge over time. The extensive amount of data available for analysis necessitates that this goal be achieved over a period of time extending beyond the two years of the project. During the terms of the project, we focused on providing comprehensive description of the children's language skills during just the first sampling period. This description provides the baseline or reference point from which subsequent longitudinal comparisons will be made. Given data at three age cross-sections, however, some hypotheses about development can be generated from the analysis of children's language in the first sampling period. For the longitudinal analyses subsequently undertaken, the selection of sampling intervals will vary depending on the goal of the analysis.

Overview of the Data Analysis Plan

Analysis of the data for the first sampling period has proceeded on three levels. To meet the first analytical objective of the study, the age and acquisitional order of global semantic or content categories have been examined. Second, a detailed examination of the semantic category of location was performed. Third, a selected analysis of sound segments produced by the children was undertaken. Within each of these three broad aspects of the analysis, we have attempted to address the issues of individual differences and differences due to sex, and dialect variation.

In the three sections to follow, the specific analytical procedures and results are described for the three major types of analyses undertaken. Our aim here is not to be exhuastive but illustrative of the direction and character of analyses that will necessarily be ongoing if the data base is to be fully exploited.

CHAPTER III

Semantic Analyses

General Semantic Category Analysis

The review of language acquisition research in Chapter I revealed the general sparcity of existing data and some important limitations with respect to meeting the theoretical and methodological guidelines for conducting language acquisition research that will reflect the latest advances in developmental psycholinguistics. The analytical phases of the "Developmental Study of Black English" described in this chapter illustrate how the basic guidelines are being used to provide a new direction for language acquisition research on Black children. The theoretical and methodological approach required by the new direction will allow researchers to address semantic and pragmatic issues that have been the focus for over a decade of pioneering research on children acquiring Standard English. The major goal of the new direction is to move language acquisition research on Black children into the mainstream of the general child language research as noted in Chapter I. In order to achieve this goal, researchers must abandon the outdated, unidimensional frameworks that have been employed in most studies. This is precisely what was done when we designed the "Developmental Study of Black English. In accordance with guideline 1, the research is being conducted within a framework that views language in terms of form, content, and use interactions. In this respect, it represents more than an attempt to increase the amount of available acquisitional data on Black children, it represents a major shift in the direction of language acquisition research on these children. In particular, the focus is shifted from a description of just dialect specific features, or forms, to a description of

the more general and universal features that Black English speakers share with all speakers of English and with speakers of other languages. In the following section we will describe the objective, specific methodology, and the results from the semantic category analysis.

Framework for Analysis

To meet the requirements of the guidelines proposed in Chapter I, we are following the theoretical and methodological orientation of Bloom and associates (Bloom, 1970; Bloom et al., 1975; Bloom and Lahey, 1978; Bloom et al., 1980), which views the child's emerging linguistic competence in terms of content, form, and use interactions. In the multifocused approach, content or meaning is viewed as the most primary aspect of a language sample analysis. The investigator is required to first classify the child's utterances according to a set of 22 semantic categories that include such referential notions as action, state, time, possession, recurrence, etc. For example, if a child's corpus includes the utterance, 'more cookie', this construction would be placed in the category of recurrence, and viewed as evidence that the child knows more than just the forms 'more' and 'cookie', he also knows that it is possible for objects to recur, and that this primary knowledge can be represented linguistically with 'more' and 'cookie'. The more complex the utterance, the larger the number of content categories that are assigned. For example, a construction like "more cookie in the bag" reflects knowledge of location and recurrence. The coordination of content categories within utterances reflects the increased complexity of a language system.

The specific objective for the semantic category analysis is to provide a descriptive and explanatory account of the general types of semantic categories that are linguistically coded by working-class Black children at different developmental stages. The analysis of content or meaning in

the child's language constitutes the foundation and first step of the grammatical analysis in our methodological framework. Evidence for the types of semantic categories underlying Black children's language portrays an aspect of their knowledge that has not been systematically documented in previous acquisitional studies.

Procedures for the Semantic Category Analysis.

The semantic category analysis was based on cross-sectional data from the first sampling period only. The data subset consist of 5,597 utterances (23 hours of spoken language) that were produced by the children who represent three age groups (18 months, 3- and 4;6 years). The transcripts of the subjects' utterances were more or less randomly assigned in equal number to the two investigators who independently placed utterances in one or more of 17 semantic categories after carefully examining the utterances and the contexts in which they occurred. These included the categories of action, existence, state, coordination, causality, antithesis, epistemic, location, negation, time, quantity, specifier, possession, attribute, recurrence, dative and mood. The specific procedure for assigning utterances to the locative category provides an illustration of how the 5,597 utterances were assigned to one of the 17 semantic categories.

First, utterances were categorized as locative if they included a locative word providing that (a) they referred to spatial location and thus could be appropriate responses to where questions or (b) they referred to location that could be corroborated by the context of the utterance. For example, the utterance, "my dolly sit in that chair" is a semantically appropriate answer to a where question such as "where is your dolly?" or "where is your dolly sitting?" On the other hand, in in the utterance "I'm in a hurry" is not locative, furthermore, it does not provide an appropriate response to a where question, thus it would not be categorized as locative.

Second, utterances that did not include a locative word, were identified as locative if (a) the child responded, appropriately to where questions and (b) the context of the speaking event supported spatial locative reference. With respect to context, an inference about the actual location of the referent object was made by observing whether the child pointed to or positioned an object at the time of the utterance. To illustrate, if a child said, "cat table" while pointing to a cat on a table in response to a locative question such as, "where is the cat?" the context would be used as evidence for categorizing the utterance, "cat table" as locative. Locative utterances, and utterances providing evidence for other categories, that were imitated, fragmented or stereotypic verbal routines like poems, riddles, etc. were excluded from analysis. A detailed examination of the utterances and the context in which it was produced constituted the basic procedure for assigning the set of utterances to the 17 semantic categories.

Table 1 presents operational definitions and examples of each semantic category. The 17 categories represented are smaller than the number described in Bloom and Lahey. In our effort to represent the most general categories of knowledge, we merged some categories, treated separately in the Bloom and Lahey description, e.g., locative state, locative action, and place are considered subcategories of location and are represented as one instead of three. The mean agreement between the investigators in making semantic category assignments averaged 96.2 (SD = 16.8) based on repeated judgments of a reliability sample that included 995 utterances distributed across 17 categories and 12 children.

TABLE 1 HERE

Table 1. Working Definitions and Illustrations of Semantic Categories[a]

Semantic Category	Working Definition (adapted from Bloom and Lahey, 1978)	Examples of Child's Utterance	Excerpts from Contexts
Action	refers to voluntary or involuntary movement that affects only the person or object engaged in the movement or both the object engaged in movement and another person or object.	He eating	(C. pointing to a picture which depicts a boy eating)
		you wiping my nose	I. wipes child's nose
Existence	refers to an object's identity with or without specifying its properties or attributes.	a monster	I. who is that Shirrell? (C. pointing to picture in book)
State	refers to an external or internal condition or quality of objects, events, or actions.	mines big	(C. playing with toy car)
Location	refers to the site or place of objects states, actions, or events in a spatial field; the movement resulting in the positional state may or may not be specified.	one down here	(C. picks up car from bottom of tracks)
		now put them in here	(C. placing beans in pot)
Dative	refers to the recipient of an object acted upon, where the recipient is animate and has the possibility of responding to the act by performing the act of receiving.	give me the car	(C's sister is trying to prevent him from playing with the race car.
Mood	refers to the attitude or disposition of a person toward an object, action, or state as one of obligation, desire, or intent	they can cook	(C. playing with dried beans and pretending to cook them)
Negation	refers to the nullification of an existing event, state, or action by denying or rejecting its presence.	No, they not good. They bad.	I. you think wolves are good.
Causality	refers to a dependent relationship between two or more states, objects, and/or actions as one of cause/effect.	we don't spose to have no bread tonight	(C. pretends to cook some beans)
		'cause you see we going to a party	I. What about bread?
Epistemic	refers to the dependent relationship between two or more object states, and/or actions as one of certainty or uncertainty.	I know how to do it	(C. blowing bubbles)

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Table 1. Working Definitions and Illustrations of Semantic Categories (continued)

Antithesis	refers to the dependent relationship between two or more objects, states and/or actions as one of opposition, qualification, or nullification.	She don't have no shoes on, but she do, and she do.	(C. looking at picture in book)
Coordination	refers to the temporal and/or spatial relationship between two or more independent objects, events, actions, or states.	one for you, and one for me	(C. gives one car to I. and keeps one car for himself)
Time	refers to when an action or state occurs including past, present and future temporal reference relative to the speaking event as well as aspectual features of temporal reference.	he cooking soup.	(C. and I looking at picture in book) I. Is he cooking? It sure looks like it.
Attribute	refers to properties or qualities of an object, action, or event which distinguish the object, action, or event from others of the same class.	big car	(C. pointing and looking at a car located near a door)
Specifier	refers to a single object, action, or state or designates a specific object, action, or state among a series of objects, actions, or states of the same or different class.	put the plate down	(C. picks up two plates and places them on the floor)
Quantity	refers to the number or portion of objects, actions, events, states.	I want some ice cream	(I. and C. are looking at a picture which depicts a wedding party) I. Why do you want to be there?
Possession	refers to the ownership of objects, states actions, and events.	yours go right there	(C. points to place on track for another car)
Recurrence	refers to the reappearance of a previously present object, state, or action.	I want to get me another bag	(C's playmate is holding the toy bag used by the investigators to transport toys)

[a]To preserve space, the context excerpts are not presented in sequential relationship to the child's utterances as is typically done.

Utterances that represented each semantic or content category at a given sampling period were inspected for every child to reveal which categories were productively used, i.e., occurred systematically in a child's system based on a criterion of productive use. Following Bloom and Lahey, productive use was defined as the occurrence of a semantic category in five or more different utterances and contexts. For each semantic category that met the productive use criterion, the relative frequency of occurrence in a given sampling period was computed by taking the total number of analyzed utterances as the N value.

Results and Discussion

The results that follow reveal the number and types of semantic categories that were productively used by the children at the three ages (18 months, 3-and 4 1/2 years) in the first sampling period. These data form the baseline against which subsequent longitudinal comparisons can be made. Comparisons were made among the four children in each age group to determine group trends and among children at different ages to make inferences about developmental differences in performance.

The proportion of utterances representing each of the content categories that met the criterion of productive use in the first sampling period is shown for the 4;6,3;0, and 18-month-old groups in Figures 1, 2, and 3, respectively.

FIGURES 1, 2, 3 HERE

The figures reveal evidence for three predicted findings, each of which is stated and elaborated upon in the succeeding discussion.

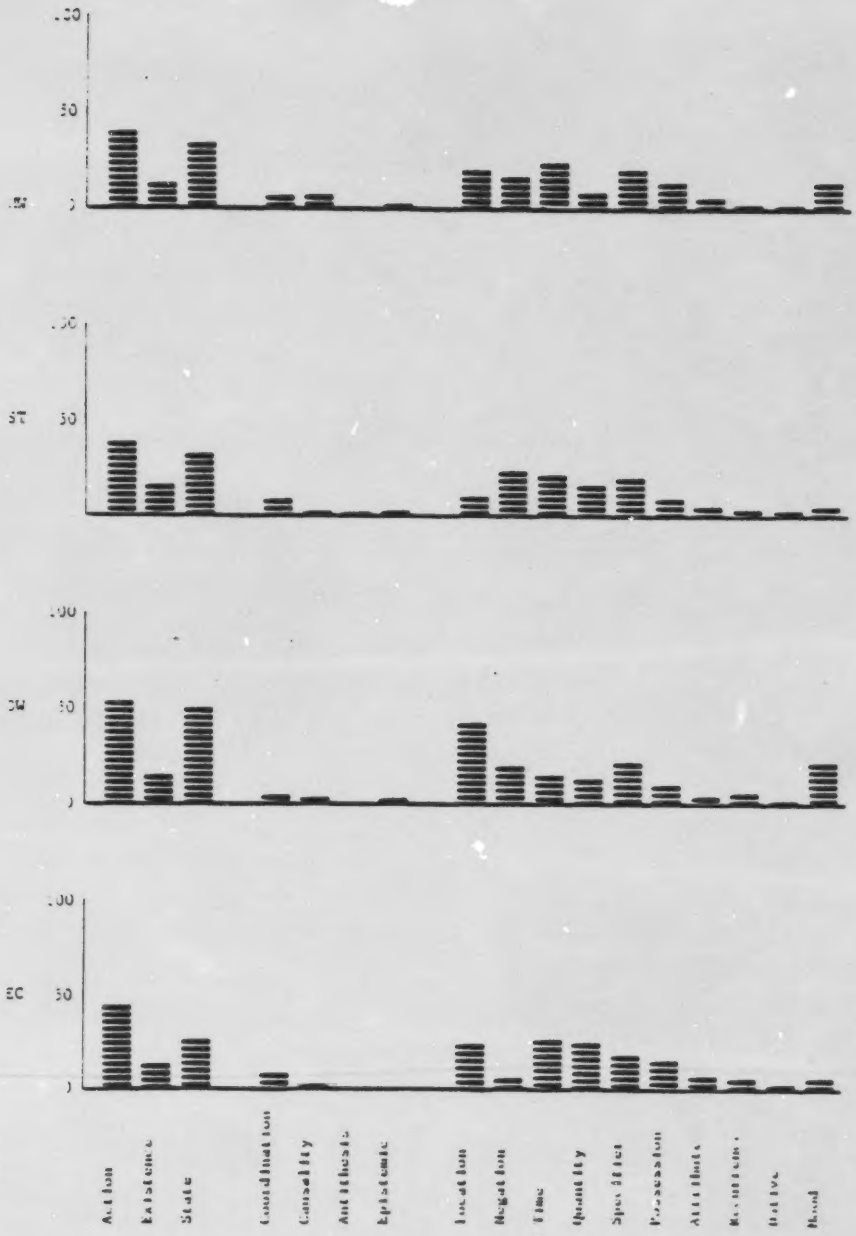

Figure 1. Semantic Categories For The 4;6-Year-Old Children

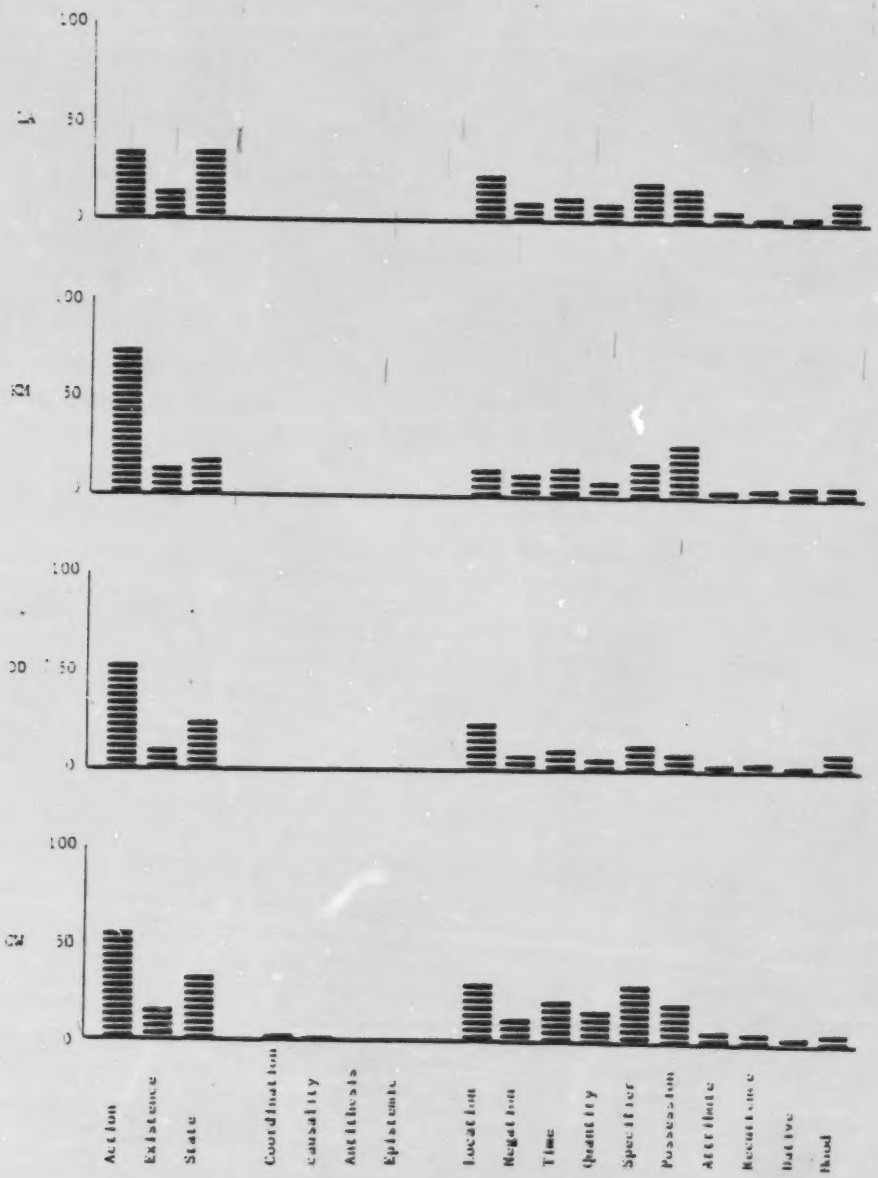

Figure 2. Semantic Categories For The 3-Year-Old Children

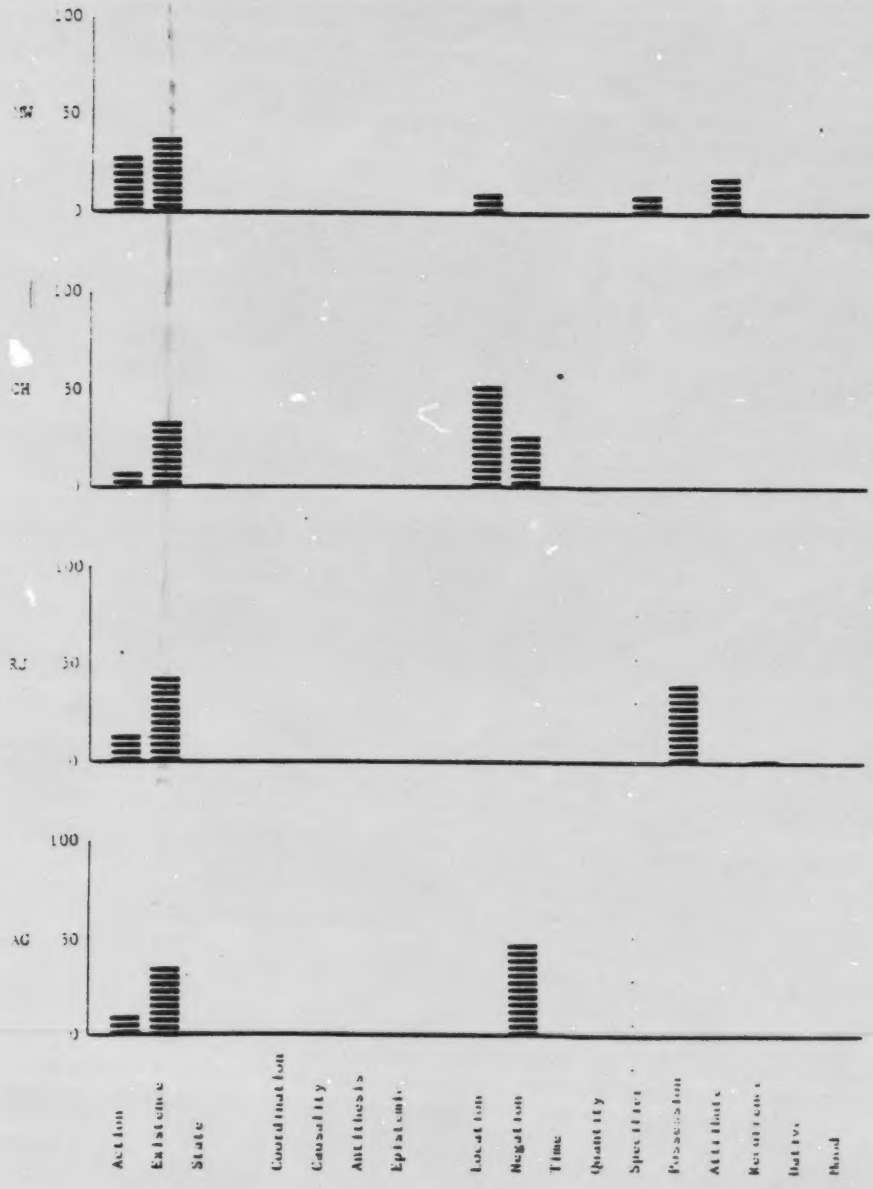

Figure 3. Semantic Categories For The 18-Month-Old Children

1. Working-Class Black children linguistically code the same general types of semantic categories that have been described for children acquiring other language systems.

Inspecting the data for 4;6-year-old children in Figure 1, remarkable similarity can be observed among the four children in the types of semantic categories represented in their first language samples. The data reveal that the language of every child was sufficiently complex to represent a wide range of semantic categories that included action, existence, state, possession, dative, locative, and temporal relations, in addition to the more complex relations of causality, epistemics, etc. Though their relative frequency in any given child's language sample varied, all 17 categories were coded by one or more of the children studied. In fact, to represent fully the semantic knowledge at 4;6 years, the number and types of content categories included in this analysis would require expansion to include, for example, the child's linguistic coding of conceptual knowledge governing comparative and conditional relationships. The data of Figures 2 and 3 suggest that the types of content categories represented in the children's language at 3 years and 18 months were emerging in the same direction as that observed for the 4;6-year-old children, though given the younger ages, a smaller set of categories was understandably used. The types of content categories represented by the non-mainstream English spoken by working-class Black children have also been described for children acquiring other language systems, including Standard English (Bloom et al., 1975), Finnish (Bowerman, 1973), Samoan (Kernan, 1970), Italian, Serbo-Croatian and Turkish (Johnston and Slobin).

This finding is not surprising given the expectation that children universally acquire linguistic structures for coding fundamental aspects of

human experience that relate to objects, time, location, action, etc. But the findings are especially significant because they represent the first major documentation of the development of semantic knowledge in Black children. We predict these findings will be particularly relevant within practical domains where Black children's knowledge of language concepts has been historically questioned.

2. The number and types of content categories represented in the language of working-class Black children increased as age increased.

Comparisons of data trends in Figures 1, 2, and 3 revealed that 4;6-year-old children linguistically coded a larger number of the content categories than did 3-year-olds, and of the three age groups the smallest set of content categories was represented in the language of 18-month-old children. Note that at least 15 (88%) of the 17 categories were coded by every 4;6-year-old child compared to 13 (76%) for every 3-year-old child. Among the 18-month-old children, just seven (41%) of the 17 categories were represented in the language samples, viewed collectively. For any child, however, the number of content categories represented varied from two to five (12 to 29%).

The four content categories that code complex semantic relations (causality, coordination, epistemic, antithesis) constituted the principal differences between the 3 and 4;6-year-olds, none was productively used by 3-year-old children with one exception (C.W.)

Like 3-year-old children, those at 18 months (see Figure 3), did not linguistically code the four content categories of complex relations (causality, coordination, epistemic, and antithesis). But, children in the 3-year-old and 18-month-old groups differed in that the latter group also did not code the content categories of state, time, quantity, recurrence, dative, and mood in the first language sample.

It comes as no surprise that age is a critical factor in accounting for the number and type of semantic categories that are linguistically coded by working-class youngsters since their linguistic knowledge, like that of other children, would be expected to evolve over time as a result of experience and maturation. Further, given that children acquire their language systems over time, knowledge of some language features would be expected to emerge earlier than knowledge of others. One cannot, therefore, study the working-class child's or any child's language knowledge at one or two ages and expect to validly generalize the findings to children of all ages.

A discussion of why some categories emerge earlier than others is not provided here though given the theoretical framework, we could appeal to the nature of the linguistic code, its use in addition to underlying cognitive factors in an attempt to account for the observations. The linguistic code, for example, could partly account for the earlier emergence of a content category like 'action' compared to those such as causality, antithesis, etc. "Action" can be coded with single words ('eat', 'move', 'throw') or single sets of verb related constituents ('eat the food', 'boy throw the ball', 'move boy'). But the categories of coordination, causality, epistemic, antithesis cannot be coded with single words. Not only are they conceptually more complex, but they require grammatically complex constructions involving two or more sets of verb related constituents (e.g., 'I know that he can throw the ball') plus knowledge of syntactic connectors such as 'that', 'but', 'because').

3. There were individual differences among children at the same age in the types and the relative frequency of content categories represented in the language samples.

Further inspection of Figures 1, 2, and 3 reveals individual differences in every age group with respect to the types of categories represented.

Note for example that among the 4;6-year-old children, all 17 categories met the criterion of productive use in the first language sample of one child, S.T. Two children, M.W. and D.W., had productive use of all categories except one (antithesis) and the fourth child, E.C., lacked two of the categories (antithesis and epistemic).

Amonth 3-year-old children, C.W's coding of causality and coordination categories distinguishes his performances from the other three children. Eighteen month old children, however, showed the greatest variability. As noted earlier, the number of categories represented in any one child's language sample ranged from three to five. The five categories coded by M.W. included action, existence, location, specifier and attribute; the four coded by C.H. included action, existence, location and negation; the three coded by A.G. included action, existence, and negation, whereas the three categories coded by R.J. included actions, existence, and possession. Except for action and existence, none of the categories was represented in the language samples of all four children.

It is also clear from the data displays that the children differed within and across age groups in the relative frequency with which any given content category was represented in the language sample. Consider for example the action category: We note that among 4;6-year-old children, the relative frequencies ranged from 39% for S.T. and M.W. to 53" for D.W. Among three-year-old children, the range was even wider, varying from 35% for L.M. to 74% for K.M. Among 18-month-old children, the relative frequency of action utterances varied from 10 to 28%. Individual variability in relative frequency can be also observed for all the remaining categories.

It is likely that some of the individual differences can be accounted for by the specific types of activities and communicative interactions that would obviously vary across sampling events for different children

given a naturalistic approach to data collection. The variability in the types of early content categories coded suggests that content categories are probably not learned in the same order for all children. It is speculated that language use in the home environment may influence the particular types of categories that are coded earliest, as well as the specific linguistic forms used to represent them. For the very young child in particular, sources of language input are likely to be more restricted and tailored to the language patterns and conceptual distinctions that are most salient in a small group or family network compared to older children who are exposed to the larger speech community.

Irrespective of how one attempts to account for it, the fact of performance variability among individual working-class Black children means that their language competencies cannot be represented in a wholly stereotypic fashion.

Summary

The results of the semantic category analysis revealed that Black children's language codes the same kinds of semantic categories that have been described for children acquiring other languages and that such knowledge evolves in an orderly sequence over time. While these findings were expected, they are significant because (1) they represent the first major documentation of the general kind of semantic content underlying the language of this group of speakers, and (2) they provide additional cross-linguistic and cross-cultural evidence that the semantic categories under study may be universally relevant to a description of any language system.

Our goal for the first stage of the semantic category analysis was to reveal the breadth of the children's knowledge of content, and this is why such a broad set of categories was examined. Longitudinal data analyses are being conducted to reveal further details regarding the order

of emergence of particular categories (Stockman and Vaughn-Cooke, in prep.) Subsequent goals will involve revealing depth of knowledge in specific categories. For example preliminary data analysis has revealed the enormous complexity and range of semantic distinctions within a global category. To illustrate, our observations on location revealed that working-class Black children exhibit knowledge of dynamic locatives (e.g. go up, go down, throw over), whith code movement orientation and direction, and static locatives (e.g. in there, on the ground, behind me) which code positional states (this distinction has been reported for SE speaking children by Bloom et al. 1975) In both the dynamic and static subcategories, locative knowledge appears to be further differentiated in terms of whether children can talk about location of actions, events and objects. A detailed description and an explanation of this differentiation will be presented in the next section.

Specific Semantic Category Analysis: Location

This section includes a detailed analysis of one semantic category - location. The goal is to reveal the complexity within a global category and to highlight the need for further investigations of the 17 categories examined in the previous section. The organization for the present section is as follows: First we will present the background and review of the literature. Then we present the focus, methodology, and findings for the locative analysis.

Background and Related Work

Child language research has shown that the semantic category of location represents an important, and a very early acquired type of knowledge. Bloom, Lightbown, and Hood (1975) reported that it is the second semantic category (action is first) to be coded productively by young children. Their research indicates that at least 13 other semantic categories are acquired

after the locative one. These include possession, negation, attributuion, intention, recurrence and state. While children begin at an early age to talk about the relationships between objects in space, the results reported in this section revealed that the full set of locative distinctions observed in the adult system is not coded until after the age of 4;6.

Semantic descriptions of the adult's spatial expressions have revealed that a highly complex network of knowledge underlies the ability to talk about the location of an object in space. Analyses of adult constructions which code locative relationships have revealed that such constructions can be subdivided into two major categories. These include dynamic and static Locatives (Lyons (1968), Fillmore (1968), Leech (1970), Bennett (1972), Quirk, Greenbaum, Leech, and Svartvik (1972)). Dynamic locatives constructions are those which code the movement that causes an object to change its direction or position in space, e.g., 'The girl walked home'. Walking is the movement or action that caused the girl to change her location from whatever point (unspecified in the above utterance) she occupied at an earlier point in time to her destination, home. Static locatives are constructions which code an object's fixed position in space without reference to the movement which caused the object to occupy a particular position or specific point along a directional plane, e.g. 'The girl is at home.' In this case the movement which caused the girl to be at home is not expressed in the utterance.

Scholars who have investigated the adult system have observed further that dynamic locative constructions can express four subcategories of knowledge. These include the <u>origin</u> or source from which an object is moved, e.g., 'The girl walked home from the store'. They can code the <u>direction</u> or path along which an object is moved, e.g., 'The girl walked along the road to her home'. Further, they can code the destination or the position that the object occupies as a result of the movement in space, e.g., 'The girl walked

to school'. Finally, dynamic locatives can code combinative reference, a complex subcategory which expresses a combination of information about two, or all three of the above subcategories. For example, the utterance, 'I walked up to the top of the building' codes both direction and position and the utterance, 'I walked from the ground floor up to the top of the building' codes origin, direction and position. Investigators of adult systems have presented evidence which shows that these same subcategories, i.e., origin, direction, position and combinative reference are also expressed in static locative constructions. For example 'The girl is from Chicago' codes the subcategory of static origin, 'The girl is up high' codes static direction, 'The girl is at home' codes static position, and 'The girl is down on the second floor' codes static combinative reference.

Semantic descriptions have indicated that these four subcategories can be further subdivided according to the specific concepts expressed by individual locative words. For example, both the constructions 'The book is on the box' and 'The book is in the box' are static positional locatives, but they differ in the concepts encoded in the subcategory of position. The concept 'on' indicates that the specific spatial relationship between the book and the box is that of <u>contact</u> with a surface, while 'in' specifies a relationship in which the book is <u>interior</u> to the box.

In sum, adult studies have shown that dynamic locatives, even when coded by the most simplistic construction indicate (1) that the location of the object is being changed from its original position in space (which is expressed by movement verbs) (2) that the change is to another direction or position, and (3) that a specific spatial relationship, e.g., 'in' 'on' or 'under', characterizes the object in its new location. It is important to point out that it is impossible for a dynamic locative to indicate unambiguously the specific location of the object by referring only to movement (e.g.,

'put') or only to the reference position (e.g., table), or only to the particular spatial relationship between the two objects (e.g., 'on'). Regarding static locatives, it has been observed that these constructions indicate (1) that the location of the object is not being changed (2) that the object occupies a particular position or direction in space, and (3) that a specific relationship, e.g., 'on', 'in' or 'under', exists between a reference object and a reference point. Like dynamic locatives, it is impossible to specify the location of an object in space by referring only to its state, i.e., its position or direction, or to the relationship which exists between the reference object and some other object in space.

An adequate characterization of the evolution of locative knowledge in the child must include a description of the development of the major categories, the subcategories, and the individual locative words. Nearly all of the child language research on location has focused on the development of individual locative words; only one study (Bloom, Lightbown, and Hood (1975)), has focused on the development of the major categories; and no studies have focused on the evolution of the four subcategories that differentiate the two major categories. It is this critical gap in the child language research on location that this specific analysis will help fill.

From a theoretical perspective, closing the descriptive gap would provide the detailed evidence needed to construct a more convincing and a more comprehensive explanation for the development of locative knowledge. At this point, order of acquisition of locative knowledge is discussed mainly in reference to the order of acquisition of individual lcoative words. Researchers have explained the observed order by claiming that the underlying meaning of locative words is a factor that affects their acquisition (see Johnston and Slobin (1979) for a discussion of structural factors which affect acquisition order). This approach to describing and explaining the development of the child's locative knowledge cannot account for our

findings which showed that during the early stages of development, locative words are used appropriately, but not to code both dynamic and static subcategories. For example, it was observed that while the youngest children (1;6 year olds) in the sample used the directional word 'up', it encoded only dynamic direction (e.g. 'It's going up high.'), and never static direction (e.g. 'It is up high.'); and while they used the positional word 'on', it encoded only static position (e.g. 'It is on the table'), and never dynamic position (e.g. 'Put it on the table'). The older children (4;6 year olds), however, used 'up' to code both dynamic and static direction, and 'on' to code both dynamic and static position. These observations suggest that there are factors (e.g. the change or non-change of an object's location) other than the meaning of individual locative words which can facilitate or retard their use in all of the contexts or subcategories in which they can occur. In order to characterize such factors, a detailed description of the spread of locative words across subcategories is needed. The evidence obtained from such a description could provide the foundation for costructing a more comprehensive explanation for the evolution of locative knowledge.

The work of Antinucci and Miller (1976) provides an important illustration of the explanatory value of a detailed descriptive investigation (see also Bloom, Lifter and Hafitz 1980). They examined the development of past tense expressions in the speech of children from 1;6 to 2;6 years, but instead of describing the child's evolving knowledge solely in terms of the percentage of occurrence of the past tense morpheme (as Brown (1973) did), Antinucci and Miller examined the subcategories of verbs to which the past tense morpheme could be added. They found that the semantics of the verb was a powerful factor affecting the spread of the morpheme across verb subcategories. For example, the investigation revealed that while the subjects used three subcategories of verbs (state verbs, e.g. hear and know; activity or change

of state without result, e.g. run and walk; and change of state with clear result, e.g. drop and open), only one subcategory, change of state with clear result, was marked for past tense. The researchers concluded that during the early stages of development, the meaning of the child's past tense is rather limited. "He is able to encode a past event, but only if it results in a present state." (1976):183).

Antinucci and Miller's detailed investigation revealed critical facts about the acquisition of past tense which allowed them to develop a convincing cognitive-based explanation for the development of past knowledge (see Antinucci and Miller (1976:182-183)). Such an explanation could not have been proposed if their investigation had focused on the isolated occurrence of the past tense morpheme. The descriptive framework for the analysis is similar to the Antinucci and Miller study in that it will allow investigators to go beyond describing the order of acquisition of individual locative words to revealing the complex set of factors which affect the use of such words to code the dynamic and static subcategories.

The question of central relevance to this section is: how does the child's locative knowledge emerge and develop over time? The available research addressing this question falls into 2 sets: (1) studies which have focused on the development of the concepts underlying individual locative words, e.g., 'in', 'on', and 'under'; and (2) studies which have focused on the development of the two major categories, dynamic and static locatives.

Studies on Individual Locative Words

Both comprehension and production studies have been conducted on the development of locative knowledge in young children. An early investigation was that of Ames and Learned (1948) who provided an inventory of spatial terms produced in spontaneous conversation by children between the ages of 1;6 and 4;0 years. The locative words included 'up' 'down', 'off', 'on',

'in', 'over', 'back', and 'to'. The analysis revealed that despite individual differences, there was a relatively uniform age sequence in the development of the major concepts of space, as reflected in the use of particular lexical items. The investigators, however, made no attempt to explain the observed sequence.

A number of other more recent studies (E. Clark 1972, 1973; Brown 1973; Kuczaj and Maratos 1975; Grieve, Hoogenraad and Murray 1977; Washington and Naremore 1978; Cox 1979; Johnston and Slobin 1979; and Dromi 1979) also provide information about locative development, but unlike the Ames and Learned study, a major goal of these later works was to provide an explanation for the order of acquisition of locative words. The cross-linguistic investigation of Johnston and Slobin (1979) is a good examplar of this approach. They examined the ability of children between the ages of 2;0 and 4;8 to produce locative words (pre-and postpositions) in four languages: English, Italian, Serbo-Croatian, and Turkish. The words included 'in', 'on', 'under', 'beside', 'between', 'back', and 'front' with featured objects, and 'back' and 'front' with nonfeatured objects. The results revealed a general order of development across languages. It was observed that the set 'in', 'on', 'under', and 'beside' is learned prior to the set 'between', and 'back' and 'front' with featured objects, and this latter set always preceded 'back' and 'front' with non-featured objects. When explaining the order of development, Johnston and Slobin considered the complexity of the specific concepts underlying locative words and a number of linguistic (structural) factors which may affect the child's discovery of the structures which encode the concepts expressed by locative words.

While some of the studies cited above were concerned with broad theoretical issues (e.g., Johnston and Slobin (1979) with the interaction of conceptual and linguistic variables and Clark (1973) with nonlinguistic strategies and

the acquisition of word meaning), each investigated concepts underlying locative words which express the specific spatial relationships between objects. None of the studies, however, focused on the concepts underlying the major categories or those underlying the subcategories.

Studies on Major Categories

The literature search revealed only one study (Bloom, Lightbown and Hood (1975) which has systematically investigated the static-dynamic distinction in young children's locative systems. The work of Bloom et al. represents a major focus shift in the study of the child's ability to talk about the location of objects in space. The focus was shifted away from investigating children's knowledge of individual locative words to the broader notions underlying the dynamic and static categories. Following Leech (1970), Bloom et al. classified their subjects' utterances as dynamic if they referred to a movement, where the goal of the movement was a change in the location of a person or object (e.g., put ball in box). Utterances were classified as static if they "... referred to the relationship between a person or object and its location, where no movement established the Locative relation within the context of the speech event...(1975:11) (e.g., the ball in the box). Based on observation of speech behavior in four children ranging from 19 to 25 months of age, Bloom et al. concluded that dynamic locatives became productive (were coded by five or more utterance types) before static ones. This finding provides evidence for a qualitative expansion of the developmental description of locative knowledge.

A Study of the Subcategories

Our investigation focused on an aspect of the child's developing locative knowledge not examined systematically in the above-mentioned studies. The

results revealed evidence for further differentiation of the dynamic and static categories into the subcategories of origin, direction, position, and combinative reference.

Procedures for the Locative Subcategory Analysis

Data for the cross-sectional study consisted of 1,087 spontaneous locative utterances produced by the 12 subjects, who were subgrouped according to three age levels: 1;6, 3;0, and 4;6 years. Locative expressions were identified and extracted from the videotaped language samples.

Extracting Utterances from the Larger Data Base

The extraction process required the investigator to represent the structure of children's utterances and to consider the context of the utterance to infer its general meaning, a time consuming but crucial phase of the investigation. The locative expressions for a given child were orthographically recorded on standard data sheets that also provided space for recording the immediate context in which the utterance was spoken.

Locative utterances were used by the subjects to refer to where objects were located in space. As noted in the previous section, they were identified using two criteria. First utterances were identified as locative if they included a locative word providing that (a) they referred to spatial location and could be appropriate responses to where questions or (b) they referred to a location that could be corroborated by the context of the utterance. For example, the utterance, "my dolly sit in that chair" is a semantically appropriate answer to a where question such as "where is your dolly?" or "where is your dolly sitting?" On the other hand, in in the utterance "I'm in a hurry" is not locative and furthermore, does not provide an appropriate response to a where question.

Second, utterances that did not include a locative word were identified as locative providing that (a) the child responded appropriately to where

questions and (b) the contexts of the speaking events supported spatial locative reference. With respect to context, an inference about the actual location of the referent object was made by observing whether the child pointed to or positioned an object at the time of the utterance. To illustrate, if a child said, "cat table" while pointing to the cat on the table in response to a locative question such as, "where is the cat?", it would be reasonable to conclude that the referent object (cat) is located on the surface of the table. Locative utterances that are imitated, fragmented or stereotypic verbal routines like poems, riddles, etc. were excluded from analysis.

Assigning Locative Utterances to Subcategories

The two investigators made independent locative subcategory assignments to the utterances of half the children in the first sampling period. The set of identified locative utterances were assigned first to either the dynamic or static locative category. Utterances in each of these two categories were further distributed into the four subcategories that refer to location in terms of direction, position, origin, and combinative reference. The assignment of locative contextual criteria is specified and illustrated in Table 1. It should be clear from inspection of Table 1 that four subcategories of locative knowledge were examined in two major contexts, the dynamic and static. These contexts are specified in terms of whether the verb referred to movement or non-movement.

The use of linguistic criteria to derive meaning subcategories naturally took into account expected language differences in the types of surface forms used to code a given meaning relation. For example, utterances were still categorized as static locatives even when they did not include the copula verb because the grammatical systems of some Black English speakers permit the variable occurrence of the copula to code state relations.

Table 2. Operational Definition and Linguistic/Contextual Criteria Used to Assign Subcategories of Dynamic Locative Utterances

Locative Category	Operational Definition	Linguistic Criteria	Contextual Criteria	Examples
I. Dynamic	Change in the location of an object as a result of some movement.	syntactic frame which includes a motion verb + locative complement; the locative complement may be a phrase or a single lexical form.	The referent object is displaced or can be displaced during the speaking event.	They are going away. You go to the store. Put it on the table.
a. Dynamic Directional	The orientation of an object along a spatial path of movement.	syntactic frame which includes a motion verb + locative complement; the locative complement has the semantic feature of direction.	The directional plane referred to is evident by the movement of the object or the referent object can move in the spatial direction referred to.	They are going away. Put it down.
b. Dynamic positional	The place or point to which an object is displaced; i.e. the destination of a displaced object.	syntactic frame which includes a motion verb + locative complement; the locative complement has the semantic feature of place.	The referent object is displaced to an observable position at the time of the utterance or it can be displaced to the referred place or site.	They are going to the shop. Put it on the table. You go to the store.
c. Dynamic Origin	The place or position in space from which the referent object is displaced.	syntactic frame which includes motion verb + locative complement; the locative complement has the feature of direction from + place.	The direction and place of referent object's location is or can be away from the place or site referred to.	They are going from school. I took it from there.
d. Dynamic Combinative	Locative reference specified in terms of two or more subcategories of direction, position, origin, or any two aspects of the same subcategory.	syntactic frame which includes a motion verb + complex locative complement; meaning of the combination conveys more locative information than each separate locative component.	Same as that applied to locative subcategories considered singly.	Directional/Positional: They are going away to school. They put it out behind the post. Positional/Origin: They went home from school. They took it from school. Positional/Positional: They put it on the table in the house. They went to the playground at home.

Table 2. Operational Definition and Linguistic/Contextual Criteria Used to Assign Subcategories of Dynamic Locative Utterances

Locative Category	Operational Definition	Linguistic Criteria	Contextual Criteria	Examples
II. Static	Existing location of object, without referring to the movement that may have resulted in the location.	syntactic frame which includes a nonmotion verb + locative complement; the locative complement may be a phrase or a single lexical form.	The referent object is not displaced or relocated during the speaking event.	They are away. It is down.
a. Static Directional	The existing orientation of an object without referring to the movement resulting in the direction.	syntactic frame which includes a nonmotion verb + locative complement; the complement has the semantic feature of direction.		They are away. It's down.
b. Static Positional	The existing place or point at which an object, is located.	syntactic frame which includes a nonmotion verb + locative complement; the complement has the semantic feature of place.	The referent object is already placed at an observable site at the time of the utterance, or it can be placed at the referred site or place.	They are at school. It's in the box.
c. Static Origin	The original or former place of the referent object.	syntactic frame which includes a nonmotion verb + locative complement; the complement has the semantic feature of direction from + place.	The existing place of referent object differs from that which is referred to.	They are from my school. It's from right there.
d. Static Combinative	Locative reference specified in terms of two or more of the subcategories of direction, position, place, or any two aspects of the same subcategory.	syntactic frames which includes a nonmotion verb + complement; the meaning of the combination conveys more locative information than each separate locative component.	Same as that applied to locative subcategories considered singly.	Directional/Positional: They are away at school. It is out behind the post. Positional/Origin: They are home from school. It is from school. Positional/Positional: It is on the table in the house. They are on the playground at home.

It was noted in guideline (2) that the use of contextual data in language analysis follows current methodological approaches to the study of child language particularly in the semantic and pragmatic areas. Contextual criteria provided strong supportive evidence for locative meaning when the child commented on object location during activities that could be observed in the language sample.

Results

The first major finding was that both dynamic and static locatives are further differentiated into the subcategories of origin, direction, position and combinative reference. The subset of the utterances categorized as dynamic locatives showed that

(a) Some of the older children (3;0 and 4;6 year-olds) talked about the movement of an object away from its original point in space, e.g., 'Get it out of the closet', 'Move it off the shelf'. This subset of utterances provided preliminary evidence for the dynamic origin subcategory.

(b) The younger as well as the older children talked about the movement of an object along a spatial plane. For example, the younger children talked frequently about the movement of an object along the vertical plane (e.g., 'Balloon go up', 'put it down'). This utterance subset was viewed as preliminary evidence for the dynamic directional subcategory.

(c) All of the children talked about the movement of an object to a particular position in space, e.g., 'Put it on the floor'. This utterance subset was taken as preliminary evidence for the dynamic positional subcategory.

(d) The older children talked about the movement of an object along a directional plane and the position that represented its final destination (e.g., 'It's going up to the top'). They also talked about the movement of an object along a directional plane from one point in space to another (e.g., 'Move it from the shelf over to the table'). This utterance subset provided preliminary evidence for dynamic combinative reference

The utterance types categorized as static locatives revealed that

(a) None of the children talked about the existence of an object at its original point in space, e.g., 'He is from downstairs'. Further examination of the older children, particularly the 4;6 year-olds, is expected to reveal evidence for the static origin subcategory. According to Fillmore (1968); Leech (1970), and Bennett (1972), the adult system (the target system for the child) exhibits such a subcategory. It would be predicted, then, that static origin will emerge, but after all of the other categories within both the dynamic and static domains.

(b) Only the older children talked about the existence of an object along a directional plane, e.g., 'It is up'. These utterance types provided evidence for the static directional subcategory.

(c) All of the children talked about the position of an object in space without referring to the movement that caused the object to occupy a specific position, e.g., 'It is on the table'. All of the children talked about the position of objects far more frequently than the direction of objects. This subset of utterances was viewed as preliminary evidence for the static positional subcategory.

(d) Only the older children talked about the direction and the position of an object in space without referring to the movement which caused the specific location of the object, e.g., 'The ball is over there on the floor'. Such utterances provided preliminary evidence for the static combinative reference subcategory.

Figure 4 provides a summary of the findings for the dynamic and static categories. Other researchers have made observations which provide further supportive evidence for the differentiation of the major categories. In a study of movement and location in the acquisition of deictic verbs, Macrae (1976) concluded the following after analyzing spontaneous speech from seven two-year-olds: "The children paid little attention to destinations...they took account of direction (coming up) without committing themselves to the termination of the movement (1976:203). This observation supports one of the preliminary findings for the 1;6 year-olds. It was observed that the first sub-category coded by these children was dynamic direction. It was observed further that the youngest children did not code dynamic origin. Bowerman (1973) reported this same observation in her study of two Finnish children, who were 22;6 and 24;0 months at the start of her investigation. She noted "locative nouns never named a location away from which the referent was moving (1973:108-109)."

The second major finding of the locative analysis was that the order of acquisition for the four subcategories was not the same within the dynamic and static categories. Within the dynamic category, the results suggested the following order: 1) direction; 2) position; 3) combinative reference; and 4) origin. Within the static, results suggested: 1) position; 2) combinative reference; 3) direction; and 4) origin.

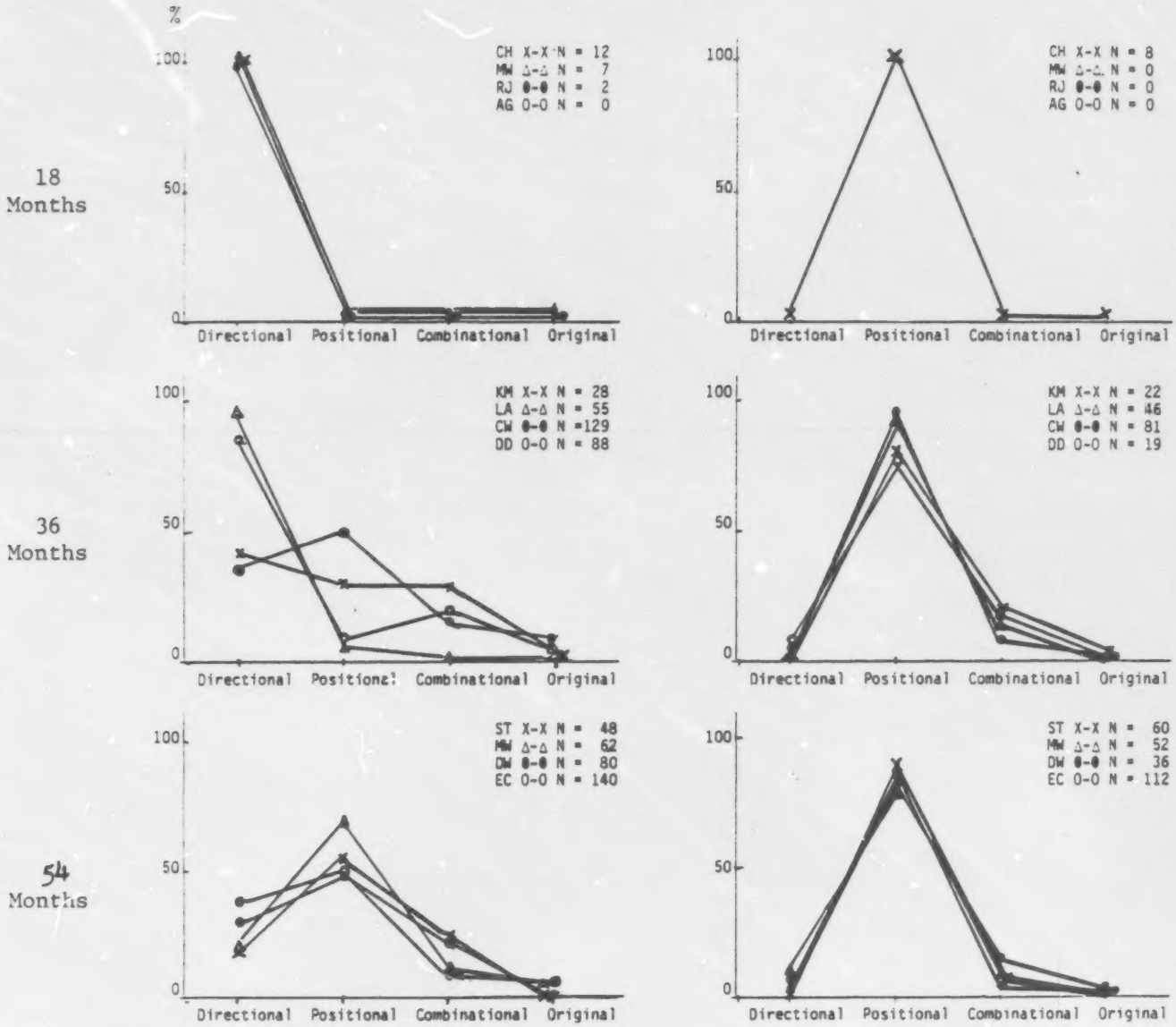

Figure 4. percentages of utterances having directional, positional, origin and combinational locative reference in dynamic locative constructions at 18 months, 3 years and 4 years of age. (N = total number of dynamic locative utterances in Sample I)

percentages of utterances having directional, positional, origin and combinational locative reference in static locative constructions at 18 months, 3 years and 4 years of age. (N = total number of static locative utteranc in Sample I)

DYNAMIC

STATIC

In the next stage of the locative analysis we will attempt to explain the observed order of development for the two sets of subcategories. We will also conduct a systematic analysis of the forms which code the subcategories. The goal will be to reveal the interaction between form and content and the changes that occur over time.

CHAPTER IV

Phonological Development in Vernacular Black English

INTRODUCTION

Although Vernacular Black English (VBE) phonology probably has received more attention than any other variety examined within the context of recent sociolinguistic studies, it is apparent that this variety still lacks descriptive attention along some important dimensions of its phonology. For one, studies of its phonology suffer from a kind of myopic selectivity which focuses on some structures to the exclusion of others. Thus, studies of select processes such as word-final consonant cluster reduction and copula/auxiliary deletion have been replicated in a number of different VBE populations while other details of the phonology remain undescribed in any significant detail. This is not to discredit replication studies for these are essential in examining sociolinguistic data, but we cannot conclude that VBE has received extensive coverage on the basis of these oft-studied select features.

Another area of relative neglect in VBE phonology concerns the acquisitional process. Although post-acquisitional studies of VBE proliferate in one form or another, there are virtually no studies of the emerging phonology. At the same time, studies in the acquisition of standard English (SE) phonology have become a prime proving ground for investigating theoretical and applied issues in developmental phonology. Given the dovetailing interests in the phonological structure of non-mainstream varieties and issues of phonological development, the lack of studies in developmental aspects of VBE phonology is particularly glaring. In the absence of detailed data on the developmental stages of VBE, several assumptions about this emerging phonology seem to be endorsed, either explicitly or implicitly. For those instances where the adult phonological units of SE and VBE appear to be identical, it typically has been assumed that the developmental route to the adult structure is no different for these varieties. For example, given the similarity

of initial stops in adult VBE and SE, it is assumed that the succession of stages and the developmental processes operating on these units will be the same. While this may be a reasonable assumption, there is a need to establish these identical developmental paths with empirical data. We may caution here that adult phonological systems must be considered in their entirety, and that the role of units in the overall adult system may influence particular details in the developmental route. Differential roles of sound classes in the adult system may interact with other considerations in determining how and when particular contrasts are developed. The important point to be made is that isomorphy in the developmental route cannot be assumed simply on the basis of similarity in the adult phonological units. The assumption is in need of empirical justification through the examination of the actual developmental processes.

If the assumptions about development in isomorphic adult structures are in need of empirical support, then the concern for the developmental route leading to different adult VBE and SE phonological structures is that much more acute. In the absence of data on actual development, we can only infer what takes place in the acquisitional process. In some instances, there is a reasonable basis for inferring what we might expect to take place based on universal principles of development. For example, there is a reasonable basis for claiming that initial nasals will be among the earlier sound contrasts to be maintained, and a reasonable basis for expecting particular processes such as fronting or stopping to affect some classes of sounds in particular phonological environments (Ingram 1976:39ff). However, there are details of such stages or processes that must be worked out within the specific target adult system so that we cannot simply presume a given route toward the adult norm. And, of course, there is much refinement needed in understanding the specific instantiation of such principles. We are hardly at the stage in understanding the general principles of phonological acquisition and the specific

details of an emerging phonology where we can ignore cross-dialectal comparisons. There remain many theoretical and practical issues that are in desperate need of the kind of examination we undertake here.

In current analysis, we examine some of the aspects of the emerging VBE phonology which highlight both differences and similarities in the VBE and SE systems. These data will provide a basis for examining assumptions about shared and non-shared aspects of the adult systems. Of necessity, our data base is limited here, and we have chosen to focus primarily on the first interview for each of the 12 subjects. In future analysis we will examine longitudinal dimensions of development more closely to show the actual process of development, but at this point we are content with an apparent time dimension.

FINAL CONSONANTS

In order to examine some of the assumptions mentioned above we have chosen to focus on the acquisition of final consonants in VBE. Final consonants in adult VBE represent a prime case of both similar and dissimilar phonolgoical structures. Studies of adult VBE phonology (Labov 1972: Wolfram 1969; Fasold 1972; Wolfram and Fasold 1974; Summerlin 1974; Baugh 1979) have detailed a number of dimensions of final segments which show different rules or different rule applications applying to final segments in VBE when compared with its SE counterpart. At the same time, there are cases where no difference in the realization of final segments has been detailed.

Compared with many languages of the world, SE has a fairly complete inventory of word-final segments. The entire inventory of simple consonants found in initial position is also found in final position, with the eception of h, so that we have a range of natural classes which includes obstruents, nasals, and liquids. SE also has a fairly representative set of word-final clusters, including both two and three member sequences. While the permissible cluster combinations in final position are not identical to those in initial position, they do represent a range of combinations,

including nasals + obstruents, liquids + obstruents, and obstruents + obstruents. Given the representative range of final consonants in SE compared with other languages of the world, it is somewhat surprising that more acquisitional studies of these final segments have not been undertaken. Much more attention has been given to initial consonants than final ones in SE; nonetheless, there exist some studies that have provided us with certain kinds of data about the development of final consonants. Since we shall have to refer to these studies as we examine the VBE phonological development examined here, it is instructive to set forth the kinds of approaches that have provided us our data base on SE final segments.

APPROACHES TO ACQUISITIONAL DATA

Several different kinds of studies provide us with a data base for examining the acquisition of final consonants in VBE. As we shall see later, there are important theoretical and practical consequences of such studies as they might be applied to the data discussed in this study so that we should at least identify the kinds of data that have been provided from such studies. Perhaps the most traditional approach to final segments, but one which is still used to provide important information, is the "normative phoneme" approach. In these cases, particular adult phonemes in English are examined in terms of their representation in child's speech, with the intent of determining when the adult norm has been acquired. In such studies, criteria are established for determining when the adult pronunciation has been adequately achieved, and the norms are usually established in terms of chronological age. A fairly classic example of this kind of study within the last decade is Olmsted (1971). In Olmsted's study, children divided into different age groupings were recorded in spontaneous conversation and the incidence of correct production of each phoneme was tabulated in relation to the number of potential occurrences of the phoneme in a particular position. If more than half of the target phones were produced correctly, then the phoneme was considered to be acquired in that position. For a given age level, if more than

half of the speakers in the cell showed correct production then the phoneme was established as normative for that age group. In other words, if more than 50% of the subjects showed more than 50% correct production of a given phoneme in a particular phonological environment, then it was considered normative for the age group. For the final consonants, the following norms are set up. The chart is adapted from Olmsted (1971:4).

TABLE 3 HERE

There are, of course, slightly different variations of this approach and different criteria used to determine a normative production, but Olmsted's study is fairly typical in its approach. One respect in which Olmsted's study differs from earlier ones is his use of spontaneous language samples vis-a-vis elicited lexical items as the basis for examining phones in different contexts. The simple dichotomy between correct and incorrect responses and the arbitrary cut-off points for establishing the norm are fairly representative of the traditional phoneme acquisition study. At this point we shall not criticize its apparent linguistic liabilities and simply note that these kinds of norms have been used widely in constructing phonological assessment instruments which separate those who are acquiring their phonology at a "normal" rate from those who are not.

Another approach to the analysis of phonological developmental data emphasizes the "linguistic stages" of development rather than the acquisition of isolated phonemes. Whether the stages are defined in terms of developing sets of feature contrasts (Jakobson 1968) or some other basis of organization, the focus here is on the orderly progression through a series of stages in the eventual acquisition of the adult system. Linguistic stages take clear precedence over chronological ones. In one presentation of such an analysis, Ingram (1976) interprets Renfrew's analysis of the acquisitional process for deviant children as applicable to the

Age Group by Month

15 - 23	24 - 29	30 - 35	36 - 41	42 - 47	48 - 54	Above 54
p						
b(?)		t				
		d				
k	g					
f		v	θ			ʧ
	s					
	v	z				z
	s					
			tš			dž
n	m				ŋ	
						l

Table 3. Acquisitional Norms for "Correct" Production of Final Consonants According to Olmsted (1971:204)

stages of development that normal children proceed through in the eventual acquisition of SE final consonants.

TABLE 4 HERE

From the standpoint of a developing phonological system, such a delimitation obviously gives more information about the system than the simple determination of correct-incorrect production of particular phones. This approach at least allows for the systematic progression toward the adult norm through a series of intermediary stages rather than an all or-nothing leap to the adult form, although the issue of systematic variability in the acquisitional process is still not considered and the stages tend to be viewed from a somewhat static, idealistic standpoint rather than a dynamic perspective in which the integral relations between stages in the progression are considered.

Finally, there are approaches to the acquisitional process which set up the progression toward the adult norm in a way which derives the child form through the application of rules or processes to an underlying form. In such approaches a particular non-adult production by a child results from the application of a set of phonological rules or processes that formally "derive" the child form. There are, of course, very different interpretations of operations applied to derive the child output from the adult-like form, ranging from Stampe's innate processes (1979) to Nielson's (1974) fairly classic generative phonological rules, but the recognition of an adult-like form as the input for the derivational operations is shared in the general framework. Progression toward the adult norm is seen in terms of the "suppression", in Stampe's terminology, or elimination of those processes not applicable in the adult system. For example, Ingram (1976:29;1974) views the progression of final consonants through steps which overcome the application of a

Stage	Pattern
1,2,3	No final consonants. In Stage 3, CVCs are imitated with final vowel, e.g. dog [dɔ- gə]
4	Appearance of final nasals: [m] correct, [n], [ŋ] vary
5	Nasals are correct; [l] appears finally
6	[ʔ] is used for all stops finally
7	[p], [b], [d] are used finally, still replace [t], [k], [g] - in latter, vowel is lengthened to indicate deleted stop.
8	Final [t] is now used. Some attempts at fricatives
9	All final consonants, including fricatives, are correct, except [k], [g]
10	Articulation normal.

Table 4. Stages in the Appearance of Final Consonants (from Ingram 1976:28)

set of such processes. Maintaining a distinction between syllable structure processes, which affect the phonotactic structure, and substitution processes, which affect segments regardless of neighboring sounds, Ingram cites a number of processes which operate upon final consonants. For example, in the early stages, final consonant deletion operates, in keeping with the tendency to reduce all words to basic CV syllables. As some segments are acquired, other processes operate to derive non-normative final consonant segments, including backing (e.g. avleolar stops to velar stops), stopping (e.g. fricatives to stops), and devoicing (e.g. voiced obstruents to voiceless). Obviously, more than one process may operate on a given segment so that a pronunciation of wash as /wak/ may involve both backing and stopping, and, from some perspectives, these processes or rules are ordered with relationship to each other (Stampe 1979). In this model, the identification of the processes or rules at various points in the progression toward the adult target model is central, and the elimination of various non-adult processes become the milestones correlating with different developmental stages.

Given the different models for charting the developmental course of phonology, it can be seen how quite different milestones for development emerge. In some instances, data presented from one perspective may be translatable into another, but the inaccessibility of some types of data given a particular methodology for collection will sometimes make our comparisons with final consonant data in other varieties of English less than complete. Nonetheless, we shall attempt to show how some aspects of VBE final consonant development are different or similar to that found in SE regardless of the particular model of the acquisitional process. As we shall see, there are dimensions of the acquisitional process we discuss here which show that none of the available models and methods of data collection is completely adequate, and we shall have to apply an analysis which is faithful to the data at hand rather than one which fits our desire for comparison across the dialects of English. We shall have more to say about this as we discuss the specific data.

A MODEL INCORPORATING VARIATION

The data of phonological acquisition are indeed intricate and complex. Over the span of a few years, children mold raw, uncharted phonetic data into a complete system of paradigmatic and syntagmatic contrasts. Given the inherent complexity of the emerging system, it is not surprising that the empirical data do not neatly fit into some of the procrustean models that have been cast for it, including those approaches mentioned above. We do not intend to take away from the insights of some of these perspectives, but simply to point out some of the dissonance between the ideal models and the real data.

Two dimensions of empirical data seem to have been slighted in some of the standard approaches to acquisitional data. One is the dimension of variability and the other is the dimension of transitionality. Fluctuation between forms seems to be one of those aspects of phonological acquisition that seems to become idealized to the point of obscuring important data, and the actual process of change seems to be ignored in deference to idealized stages of change.

It does not take astute powers of observation to note that the acquisition of phonological units does not take place in categorical leaps. That is, a child does not simply pass from the exclusive use of X to the use of Y. Instead, there is considerable variation in form, as speakers go through stages in which X and Y typically fluctuate with each other. Our challenge, then, is to make sense out of the observed variability. Various attempts to deal with observed variability have been proposed with varying degrees of success. Some approaches simply overlook it, or force it into an arbitrary categorical model. Thus, the determination of a 50% rate of "correct" production as indication of target norm acquisition simply forces variability into the straightjacket of categoricality whether it fits or not. Other attempts have been more sensitive to some parameters of variation, but still attempted to find a unifying categoricality. Thus, Ferguson and Farwell's (1975)

"phone tree" analysis highlights some underlying regularity by setting up the lexical item as primitive in early phonology. This recognition certainly handles some apparent cases of fluctuation between phonological units. Nonetheless, there is still variation between units X and Y within a given lexical unit that we must contend with, so that we have not explained away all variation. We agree with Ferguson and Farwell that we cannot ignore the significance of the lexical unit in early phonological development, but we attempt to go beyond that in our treatment by dealing with persistent variation given the admission as a lexical variable.

The model for handling observed variability adopted here is that originally formulated by Labov (1969) as the variable rule, with subsequent development and revision throughout the last decade (Bailey 1973a; Cedergren and Sankoff 1974; Sankoff 1978; Sankoff and Cedergren 1981). We shall not attempt to recapitulate this vantage point here except to say that it assumes that variability is structured by inherent linguistic constraints as well as social constraints, so that relationships of more and less frequently occurring variants are an essential part of emerging linguistic knowledge. Such a perspective not only admits variability into a linguistic description; it also provides a perspective for viewing language change as a process that ideally goes from the categoricality of X to Y through a series of intermediate steps in which the fluctuation of X and Y is systematically ordered. Thus, a dynamic model that incorporates variability as an integral part of the change is the perspective that guides our examination of child phonological data. While so-called "variable rules" provide a structured approach to phonological variation in child language, we must be just as careful of the indiscriminate application of the model as we are of the models we mentioned above. We must admit the possibility of a strong lexical component in child language just as Labov (1981) has admitted that lexical diffusion must be reconciled with the neogrammarian hypothesis. Furthermore, we must admit the possibility that the fluctuation is not

systemic in a way amenable to variable rule analysis. This is an empirical question and one which we trust will be answered on the basis of the observed data. At this point, we only admit variability in child language with the hope that we can determine systematic parameters to it. The empirical data must ultimately guide us toward a reasonable model in accounting for this variation.

METHOD

The method for extraction of our phonological data in this study was relatively straightforward, following procedures we have followed in other quantitative studies. First of all, we select a natural class of some type for the extraction of phonetic variants from the taped speech samples. Thus, we may choose word-final consonants, nasals, consonant clusters, and so forth as a unit for analysis. For each of these natural units, we transcribe those items which in the adult form would be included within the unit. For example, if we are extracting data on final nasal segments, we transcribe all units which in the adult norm will contain a final nasal. Our definition of the adult norm here includes both standard English and VBE in the initial extraction, with decisions about the determination of the ultimate norm for comparison to be made after initial extraction.

In each case, the full lexical item where a variable is found is transcribed, along with surrounding context. Thus, initial consonant extraction would include a transcription of the preceding environment as well as the entire word, whereas final nasal extraction would include the lexical item and the following phonological environment. This transcription procedure allows us to note variables of lexical item, phonological context, and phonetic variant, the parameters presumed to be potentially critical to our study. It also allows us to formulate hypotheses concerning the possible structured nature of the variation including dimensions of these three variables. These seem to be the critical components for examining the observed variation in children's phonological systems, and the touchstone for any quantitative examination of phonological data. (cf. Wolfram 1969:47-52)

At this point, all of the phonetic extraction has been done by the writer, with no formal attempts to test reliability. One informal attempt to have a class of 12 students transcribe independently selected examples of final nasal vowel versus nasal segment did, however, result in agreement with the writer's transcriptions in over 80% of the selected examples.

At this point, extraction of data for word-final obstruents, word-final nasals, initial θ and ð, and initial and final consonant clusters has been completed for each subject for at least the first sampling period. Our presentation in the following sections is limited to final nasal segments simply because of time limitations on our analysis, but we anticipate comparable analyses of the other extracted variables in the future. Final nasal segments are chosen here for presentation because of some of the descriptive and theoretical issues surrounding the question of final nasal vowels versus final nasal segments. They also have the advantage of being a structure which shows both similarities and differences across standard English and VBE. Finally, it is a variable which potentially occurs with sufficient frequency in the child phonology of English for us to undertake some preliminary quantitative examination.

FINAL NASALS

In most accounts of English, final nasals are considered to be acquired relatively early compared to other final consonants. Thus, for example, Ingram (1976:29) indicates that as a class nasals are one of the first classes acquired in final position and Olmsted (1971:16) shows a nasal segment to be in the first set of final consonants acquired. Olmsted's study indicates that final n appears before 23 months and final m typically appears in the 24-29 month-old period. Final ŋ is acquired considerably later in Olmsted's account, typically appearing in the 48-54 month old age period (Olmsted, 1971:204). Naturally, different studies indicate slightly different chronological time frames, but most treatments agree on the relatively early appearance of final segments n and m. Several

different processes may be noted in the development towards the normative final nasal segments in English. Ingram (1976:30) indicates the general process of fronting may result in ŋ→n and some stopping of nasals such as m→b or n→d. Compared to many other classes however, it seems to be less susceptible to an extensive list of processes which modify its form before eventual adoption of the adult norm.

Final nasal, in adult VBE differ from their SE counterpart in two major ways. First of all, there is the well-known tendency to apply the ŋ→n process when the final n occurs in unstressed syllables. This particular feature is in no way unique to VBE among non-mainstream varieties of English, but it is well-documented for this variety and may be semi-categorical for some speakers. Studies of its incidence generally show it to be realized in well over 50% of all instances where the rule might be applied. Wolfram and Fasold (1974:143) report levels of almost 90% in two different studies.

A second aspect of difference between VBE and English final segments is the deletion of a final nasal segment with the retention of a nasalized vowel. Wolfram and Fasold (1974:143) describe this in the following way:

> "Another variable pronunciation feature involving nasal consonants is the deletion of nasal consonants at the end of syllables. A "trace" of the deleted nasal is always left in the form of nasal quality with the preceeding vowel. The reason for this is that in English, vowels that precede nasal consonants assume nasal quality in anticipation of the articulation of the nasal consonant. Anticipatory vowel nasalization takes place, in a sense, before nasal consonant deletion so that the nasal quality is present with the vowel even when the expected consonant is not present. This is phonetically something like the nasalized vowels of French. Deletion of nasal consonants is very common in Standard English when a consonant follows. Pronunciations like ju^{n}p

for jump and co^{n}sideration for consideration (the raised ^{n} indicates the nasal quality with the preceding vowel) are very frequent in the standard dialects and are not socially stigmatized. In some non-standard dialects, a nasal consonant may also be removed at the end of a word (although apparently not between vowels within a word). In these dialects (Vernacular Black English is one), run, rum, and rung can all sometimes be pronounced ru^{n}.

(Wolfram and Fasold 1974:143)

Despite its recognition as a rule of VBE which differs in some details from its SE counterpart, there are unfortunately, very few studies of this phenomenon in VBE. Riley, as a part of Shuy, Wolfram, and Riley (1967) is the one study in which the incidence of final [$\tilde{V}$] for normative m, n, and ŋ was tabulated. In this study, deletion was generally between 15-20% for working-class Black speakers. However, Riley did not examine its incidence in terms of different phonological constraints although he noted examples representing different contexts (Shuy, Wolfram, and Riley 1967:44-46). Other descriptions of VBE have studied this structure even less, so that this nasalization process is actually one of those adult VBE structures for which we have very limited detail. However, since it is generally regarded as a part of the vernacular, and, an important process in detailing phonological development, we cannot ignore it here.

A STARTING POINT

Although there are relatively few items potentially ending in final nasal segments found among our first interviews with the 18 month-old subjects, there is little evidence that nasal segments are among those consonants represented in final position. (We shall not be discussing initial segments here, but there is strong evidence that n and m are among the segments represented in initial position of the lexical items used by these subjects.) Only one of the subjects has any instances of final nasal segment realization (R.J.) and this is extremely limited.

Out of 77 utterances which we identify as mine (although this item might also be glossed as my), three of them end in m and one ends in n. This is an exception to the predominant use of a reduplicated form [mam] and might even be interpreted as a reduplicated form which has undergone apocope, or at least progressive consonant harmony. Certainly, no case for the stable acquisition of final nasal segments can be made on the basis of this form. The other three 18 month old subjects show the following distribution of items which correspond to final nasal consonants in SE.

Monica		Carlesa		Antoine	
[wI:˞]	'ring'	[mã ĩʔ]	mine/my	[da: ʔ]	Tom
[uiw ɛ]		[mã :ĩʔ]	mine/my	[hIbI]	'seven'
[a^{i}d ɛ]	'Daren'	[m:aI]	mine/my	[ma^{ə}]	mine/my
[gw ɛ̀]	'green'			[ha^{ĩ}ʔ]	mine/my
[gw ə:]	'green'				

Obviously, the data are quite limited, but even with the limited data we can hardly conclude that final nasal consonants are indicated. Nasalization of the final vowel, a possible surface realization of a nasal at this point, is somewhat inconsistent and varies across the lexical items and subjects, although we may speculate that the beginning traces of a nasalized vowel realization corresponding to the SE final nasal is in its incipient stages.[1] We shall investigate the progression toward final nasals consonants for one subject later in our analysis. For the present, however, our discussion will focus on the realization of final nasals for those subjects in the 36 month and 54 month old periods, where there are ample instances of potential final nasals for analysis.

[1]We do not mean to imply that vowel nasalization is contrastive with oral vowels at this point, since there are many of the traditional "oral" vowels of English which also have nasalization to some degree (Clumeck 1975).

THE STATUS OF FINAL NASALS AT 36 AND 54 MONTHS

By the time speakers have reached the second cross-sectional age group of our study, there is some indication of final nasal consonants. At the same time, an extensive pattern of vowel nasalization has set in -- a pattern in which sequences corresponding to the SE vowel + nasal final sequence are nasalized in much the same way that nasalized vowels have been recorded in languages such as French or Polish. Given this observation, there are a number of questions that arise about the status of nasal segments, their relationship to nasal vowels, and the development of this pattern in relation to what we know about the adult VBE pattern. For initial consideration, we can examine the realization of nasal vowels for final SE segments in utterance-final position, an environment in which final nasal segment absence is prominent. In the following chart, set up for each of the subjects, segments are separated according to final m, n and ŋ. Items ending in unstressed -ing are considered as a separate category because of the prominence of the n realization in adult VBE. Separating out -ing in this way should give us a good indication of whether it should be considered in future tabulations as corresponding to n or ŋ.

TABLE 5 HERE

Several different observations can be made on the basis of our quantitative measurement of utterance-final nasals. First of all, we find vowel nasalization to be a process quite pervasive for all the speakers. Every subject manifests it as an active process, within a context of individual variation with respect to the actual level of realization. Furthermore, there is not much substantive difference between its realization across the 18 month old age difference indicated here. That is, between the 36 month old and 54 month old, there is no significant

should be considered in future tabulations as corresponding to n or ŋ.

	36 Month Old							
	m		n		unstressed -ing		D	
	No Abs/Tot	%	No Abs/Tot	%	No Abs/Tot	%	No Abs/Tot	%
LM	9/9	100.0	97/98	99.0	--		4/4	100.0
KM	3/22	13.6	45/57	78.9	13/14	92.9	1/1	100.0
DD	2/5	40.0	101/108	93.5	2/2	100.0	3/5	60.0
CW	24/38	63.2	70/95	73.7	1/2	50.0	0/5	0.0
Total	38/74	51.4	313/358	87.4	16/18	88.9	8/15	53.3
	54 Month Old							
MW	7/27	25.9	56/82	68.3	18/22	81.8	1/4	25.0
EC	19/46	41.3	69/125	55.2	2/9	22.2	0/3	0.0
DW	10/12	83.3	51/55	92.7	--	--	1/1	100.0
ST	5/17	29.4	29/46	63.0	5/9	55.6	3/10	30.0
Total	41/102	41.2	205/308	66.6	25/40	62.5	3/10	30.0

Table 5. Final Nasal Segment Absence for 36 and 54 Month-Old Subjects in Utterance-Final Position.

development toward the realization of the final nasal consonants. The pattern then seems to have stabilized before this period and is simply maintained across the periods. This, of course, is a pattern very different from that found for SE speakers where the final nasal segments typically have stabilized long before these periods. Instead, the nasalization of vowels for the final V+nasal sequence has been stabilized into the emerging VBE phonological system.

Another observation from the above tabulation concerns the relative strength of n as compared with m and ŋ. For all speakers with substantive variability, the absence of the final segment is favored when it corresponds to adult n. This constraint looks suspiciously like the kind of structured variability that became well-recognized among variationists during the last decade (Labov, 1969; Cedergren and Sankoff 1974). At this point, it appears that we have a genuine phonological process operating, with underlying m, ŋ, and n effecting nasalization and then being deleted. A variable constraint favoring this deletion process would then simply be a [+corna] nasal. Our observation concerning the different underlying nasals is relevant in considering the status of unstressed -ing forms here. Clearly, the quantitative evidence indicates that deletion of the final nasal for these forms functions much more like other [+coronal] nasals than it does for ŋ. While we might suggest that this is because ŋ → n is simply ordered (cf. Wolfram 1975) before a nasal deletion rule, we have no evidence for positing an underlying ŋ here. The few instances of segment realizations for SE unstressed ing are [n] and there are no other compelling arguments for positing /ŋ/ for these items. Hence, we consider unstressed -ing to be /n/ at this stage and combine it with other final /n/ units in subsequent tabulations.

The identification of underlying ŋ, m and n is not only necessary in accounting for structured variability in utterance-final position; there are other environments in which the particular nasal segment constrains the output and is realized variably. For example, compare the figures for nasal consonant deletion when a word-final nasal is followed by a word beginning with a vowel with the figures obtained for utterance-final position as indicated above.

TABLE 6 HERE

Despite the limited numbers of potential examples for some speakers and one case of a deviating pattern, which we shall discuss later, these tabulations support the need to specifically distinguish [+coronal] as a structured constraint. In fact, we can suggest that, with the exception of E.C. most speakers have a categorical or semi-categorical prohibition on deleting any other nasal but n in this environment. All subjects indicate deletion of n when the following word begins with a vowel, but only E.C. has an significant deletion of other nasals as well. Our speculation here is that E.C.is in some way different in terms of the developing form of VBE, a suggestion that has been confirmed in other considerations of his phonology. We shall have more to say about our observation here when we discuss the practical implications of our study on assessment. The tabulation of nasals preceding vowels confirms our need to specify the forms of the nasal; it also introduces a phonological context which clearly contrasts with the utterance-final environment tabulated in Table 6. One major category of following environment is considered here in addition to the following vowels and utterance-final position, namely, the effect of following consonants.

	36 Month Old					
	/m/		/n/		/ŋ/	
	No Abs/Tot	%	No Abs/Tot	%	No Abs/Tot	%
LM	0/2	0.0	5/7	71.4	--	
KM	0/9	0.0	2/12	16.7	0/1	0.0
DD	1/21	4.8	5/17	29.4	--	
CW	2/13	15.4	3/26	11.5	0/4	0.0
Total	3/45	6.7	15/62	24.2	0/5	0.0
	54 Month Old					
MW	0/25	0.0	3/57	5.3	0/5	0.0
EC	13/20	65.0	24/36	66.7	0/2	0.0
DW	0/11	0.0	6/13	46.2	0/1	0.0
ST	0/11	0.0	2/29	6.9	0/1	0.0
Total	13/67	19.4	35/135	25.9	0/9	0.0

TABLE 6. Nasal Segment Absence for 36 and 54-Month-Old Subjects when Followed by a Vowel.

For our consideration here, we have limited our examination to the following obstruents, and further divided them on the basis of their voicing. The voicing distinction is considered here because of a well-known constraint on vowel nasalization in other varieties of English--the effect of a following voiceless obstruent on realizing nasalized vowels (cf. Bailey, 1973b:233).

TABLE 7 HERE

As mentioned above, our distinction between voiced and voiceless obstruents was made on the speculation that voiceless obstruents might favor the deletion of the nasal, as they do in many adult varieties of SE. The data are not at all clear about this constraint. Clearly, such a constraint does not hold for the 36 month old subjects. If there is any preference at all, it is in the opposite direction. The 54 month old children do show a pattern which is more in the direction of the traditional one cited for English, although we must be cautious about this observation because of the quantitative limitations of the data.

Overall, deletion preceding obstruents falls in between the effect of the following vowel and utterance-final position. Clearly, the maintenance of the nasal is favored in this environment over the utterance-final position. In this regard, we may have a kind of presegmental assimilation which favors retention here and before vowels. The positional constraints as indicated in our summary table (Table 8) actually appear to seem reasonably natural given considerations of syllable structure and assimilation. That is, absence is most frequent in utterance - final position, favoring final CV phonetic outputs, and its presence is most highly favored in combinations which fall into syllable sequences of VCVC such as the realization of the following vowel.

	m			n			—		
	vl N/T		vd N/T	vl N/T		vd N/T	vl N/T		vd N/T
LM	0/4		2/5	15/16		4/4	--		--
	2/9	22.2%		19/20	95.0%		--	--	
KM	1/2		0/2	4/5		5/9	--		--
	1/4	25.0		9/14	64.3		--	--	
DD	1/2		4/5	19/20		9/18	--		--
	5/7	71.4		28/38	73.7		--	--	
CW	0/6		1/7	22/52		3/10	1/3		--
	1/13	7.7		25/62	40.3		1/3	33.3	
Total	2/14		7/19	60/93		21/41	1/3		
	14.3		36.4	64.5		51.2	33.3		
Combined Total	9/33			81/134		1/3			
	27.3			60.4		33.3			
MW	1/5		0/3	14/26		5/13	0/3		0/2
	1/8	12.5		19/39	48.7		0/5	0.0	
EC	3/5		0/5	9/12		3/16	0/3		1/3
	3/10	30.0		12/28	42.9		1/6	16.7	
DW	1/1		1/2	6/8		5/15	0/1		0/1
	2/3	66.7		11/23	47.8		0/2	0.0	
ST	3/10		0/8	6/11		5/11	---		---
	3/18	16.7		11/22	50.0		---	---	
Total	8/21		1/18	35/57		18/55	0/7		1/6
	38.1		5.6	61.4		32.3	0.0		16.7
Combined Total	9/39			53/112			1/13		
	23.1			47.3			7.7		

Table 7. Absence of Final Nasal Segments Preceding an Obstruent

In between these extremes is the middle-road of pre-segmental anticipation, namely, the following obstruent. (For other natural classes we do not have sufficient quantities for tabulation, but virtually all of the nasals following by other nasals are absent and semi-vowels seem to fall in-between obstruents and vowels.) Accompanying the summary table are the probability factors for the factor groups of the underlying segment (m,n, and ŋ) and the following phonological context (pause, obstruent, and vowel), as calculated from VARBRUL 2 (Sankoff 1975).

TABLE 8 HERE

The pattern that we find here is, of course, quite unlike SE varieties, which tend to maintain nasal segments and only realize nasalized vowels without a nasal segment preceding tautosyllabic voiceless obstruents. However, it does appear to be in line with languages that use nasal vowels to realize surface phonetic contrasts. Practically all nasal vowel languages for which there is descriptive detail prefer consonantal nasals before vowels and to disfavor them in utterance - final position (Ruhlen 1978:226). And there is some evidence from languages like Polish that the pre-obstruent environment falls into the middle of the vowel versus non-segment extremes. Whatever the adult VBE variety reduces to in terms of its nasalization process (and there is indication that the frequency levels are reduced considerably from those indicated here for the 36 and 54 month-old children), it looks very much like a fairly typical nasal vowel language.

The systematic variation we have isolated above seems to fit fairly neatly into the traditional "variable rule" paradigm (e.g. Labov, 1969, Cedergren and Sankoff 1974; Sankoff 1978), where systematic variable constraints might be incorporated into a phonological rule. Thus, for example,

36 Month Old

	N/T^m	%Abs.	N/T	^{n}%Abs.	No/T^n	%Abs.
___##V	3/45	6.7	15/62	24.2	0/5	0.0
___##Obst	9/33	27.3	63/124	50.8	1/3	33.3
___##//	38/74	51.2	312/358	87.4	8/14	53.4

Probability Values fc Factors

Pause=.826 n=.739
Obst= .466 m=.363
Vow = .195 ŋ=.383

X^2= 3.459

54 Month Old

	N/T^m	%Abs	N/T	^{n}%Abs	No/T^n	%Abs.
___##V	13/67	19.4	35/135	25.9	0/9	0.0
___##Obst	9/39	23.1	53/102	52.0	1/13	7.7
___##//	41/102	41.2	205/308	66.6	25/40	30.0

Pause =.692 n= .633
Obst. =.505 m =.39(
Vow.= .303 ŋ =.47(

X^2=17.584

Table 8 Summary Comparison of Final Nasal Segment Absence in Three Different Environments.

We might formulate a rule for nasal consonant deltion such as the following, which recognizes the factor groups of the underlying nasal segment and the following phonological context.

$$\begin{bmatrix} C \\ [+nas] \end{bmatrix} \rightarrow \langle \emptyset / \rangle \quad V \quad \underline{\qquad}_{[+cor]} \quad \#\# \quad \left\langle \begin{matrix} [-seg] \\ [-son] \\ [-syll] \end{matrix} \right\rangle$$

While we have been assuming in our previous discussion that the kind of variability we have described fits fairly neatly into the traditional variable rule paradigm, there may be some questions as to how neatly the data really fit. For example, given what we know about the role of lexical items in early phonology (e.g. Ferguson and Farwell 1975), we may question whether the tabulation represents genuine phonological variability. Without tabulations considering particularly lexical items, can we make such an assumption?

In order to challenge our assumption, we have completed several type-token counts for subjects revealing the most variability in a environment where we have the greatest number of potentional occurrences--utterance final position. Two subjects in each of the age categories are considered below:

C.W. and K.M. for the 36 month olds and E.C. and M.W. for the 54 month olds. For each subject, words occurring five or more times in utterance-final position are noted. Each word meeting this criterion is given below, along with the number of instances of segment absence out of its potential occurrences. Since there are no words which meet these requirements for final ŋ, it is not considered here.

TABLE 9 HERE

Although we have relatively few lexical items which meet the criterion for tabulating variation and the possibility of uncovered phonological constraints must be recognized in the set, the results of this tabulation are still cautiously instructive. The examination of lexical items ending in n indicates items which seem to be genuinely subject to a variable phonological process. With several possible exceptions of lexical constraints (e.g. in for C.W., green for M.W.), the range of variation does not appear different from the type-token tabulations we have considered in other variation studies. The observation does not hold, however, for m, where lexical considerations seem more prominent. For example, both M.W. and C.W. have no nasal segment absence for him/them but extensive absence for room/bathroom. Several possible explanations might account for what appears to be lexical constraint here. One possibility is that we have missed a phonological constraint such as preceding vowel height or span. Some studies (e.g. Chen 1975; Cedergren and Sankoff 1975) have shown preceding vowel characteristics to be an important constraint on nasal vowel realization. Another possibility is that we have caught a nasal segment that is moving toward segment realization, and that the later stages of this movement involve a strong lexical component. This is not unlikely in the final stages of language change, whether it be

36 Month Old

C.W.

m		n	
		down	6/6
room	17/21	mine	22/24
them/him	0/8	on	16/17
		turn	5/7
		one	6/14
		kitchen	2/7
other Items	7/9	in	1/6
		Other Items	12/14

K.M.

m		n	
them/him	1/16	man	8/8
		one	20/21
		Jason	4/5
		mine	3/8
		Other Items	10/15
Other Items	2/6		

54 Month Old

E.C.

m		n	
them/him	5/18	man	7/7
some	3/11	mine	5/5
home	1/5	on	4/5
		turn	6/9
		done	4/8
		bean	6/13
		one	12/29
		win	3/8
		again	3/9
Other Items	10/12	Other Items	19/32

M.W.

m		n	
bathroom	5/5	down	5/6
him/them	0/14	in	8/11
		one	12/15
		on	7/12
		mine	3/5
		green	1/5
Other Items	2/8	Other Items	20/28

TABLE 9. Tabulation of Final m and n Absence in Utterance-Final Position by Lexical Item

acquisitional or generational. If the relative difference between him/them and some items like room is a genuine reflection of the status of final nasal consonants, we would expect the them/him items to be acquired somewhat earlier than some of the other items such as room. It might simply be that those items learned initially will be the first to move toward a more normative final realization of final m. At this point, these are still speculative explanations and we await further data, but the speculations are interesting nonetheless in that they suggest that the lower frequency levels of nasalization tend to be more constrained by lexical considerations. Lexical diffusion may certainly interact with a phonologically-based variable rule (cf. Labov 1981).

NASAL VOWEL ACQUISITION LONGITUDINALLY

In some respects our limitation to a cross-sectional analysis in the previous sections is unfortunate, since it appears that the stages of development we have focused upon jump from a relatively early non-final nasal stage to what appears to be a fairly complete variable version of the VBE system of vowel nasalization somewhere between 18 and 36 months. Many of the most interesting questions about the acquisition of this pattern will thus have to involve the examination of the youngest subjects as they progress through time. For example, one of the interesting issues about the observed variability is the extent to which the constraints on variation are a direct reflection of the acquisitional process-a kind of dynamic paradigm applied to first language acquisition rather than language change over time (cf. Bailey 1973a). Another issue that can only be invested by carefully following individual speakers through their developmental periods of acquisition is the relationship of following nasal consonants and nasal vowels. As Ruhlen (1978:232) puts it:

It would be interesting to know whether NV's are learned tel quel, or whether they first pass through a stage when they are followed by a NC i.e. nasal consonant .

The relationship between nasal vowels and nasal consonants is a matter of considerable importance in terms of how it develops into a more stable variable stage of VBE.

At this point, we have only extracted longitudinal data for one speaker, C.H., but our future analysis will include all of the subjects. Below is a profile of the final nasal segments for different items over the course of a period from 18-29 months. Because there are so few examples and little apparent variation in the earliest period, we have combined the total for the 18-20 month period. We cannot ignore the importance of the individual lexical item in the beginning stages of acquisition, thus, we have listed all of the items ending in final nasals by lexical item, with a summary chart of the major variations following the lexical inventory.

18-20 Months

____ //	____##V	____##Obst	____##Son
	n		
mine 6Ø			
down 8Ø			
in 2Ø	1n		
open 2Ø			
Carlton 2Ø			
	m		
come 1Ø,3m	1m		
some		1m	
	ŋ		
bang 1ŋ			

21 Months

	n		
mine 25Ø,1n,1nV,2m 1mV			
balloon 12Ø,10m,1n			
down 2Ø		1Ø	
bone 1Ø,2m,1n			
	m		
come 1m			
him		1m	

22 Months

	n		
mine 16Ø	1Ø [?]		
balloon 5Ø,1m		1Ø	1Ø
down 1Ø			
bone 2Ø			
turn 1n			1Ø
on 3Ø		2Ø	
bean 3Ø		1n	
one 3Ø,1m			
open		3Ø	
in			2Ø
man 5Ø			
	m		
come	3m		
boom	1m	3m	
bam 1m			
them/	2m		
him			
home 1Ø			

_____//	____##V	____##Obst	____##Son
	23 Months		
	n		
mine 1Ø			
balloon3Ø			
down 4Ø,1n		1Ø	
bean 12Ø,3n,6ŋ	2n	1Ø	
on 4Ø		2Ø	3Ø
in	1Ø,1d	1Ø	1Ø
open	1d	1Ø	
Carlton	6Ø	2Ø	
one 2Ø			
turn		1N	
gone 2Ø	2n		
mean 1Ø			
spoon1Ø			
alone 1Ø			
cooking 1Ø			
taking	1Ø		
seven 2Ø			
	m		
come 1Ø	1m		
them/him 1Ø,12m	4m	3Ø,5m	
drum 1m			
some	1m	1Ø,4m	
ice cream 1ŋ			
	ŋ		
thing 2ŋ			
swing 3ŋ			
bang 1ŋ			
	25 Months		
	n		
mine 12Ø 1 [ba:n]	1Ø[?]	4Ø	1Ø
down 8Ø, 1n			
in	2n	2N	
gone 3Ø		1Ø	
turn 1Ø			
on	1n		
one 14Ø			
man 1Ø			
alone 1n			
balloon 1Ø			
train 2Ø			
taking 1Ø			
eating 1Ø		1Ø	
green		1N	1Ø
happen		1Ø	
	m		
come	3m		
ice cream 1Ø			
some 2Ø			
same		1m	
them/him		1Ø	

_____//	____##V	___##Obst	___##Son
	ŋ		
swing 2Ø, 1ŋ			
sing			1Ø
thing 2Ø,1n			1N
	27 Months		
	n		
in 2Ø	14n	2Ø,1N	4Ø,2n
on 5Ø	1Ø,3n	3Ø,4N	1Ø,1n
down 4Ø,1m		1Ø	
open 2Ø	5n		2Ø
balloon 1n,1m			
stone	1Ø		
man 2Ø	2Ø	1Ø,1N	
gone 3Ø	2Ø	2Ø,1N	
Robin 4Ø	1Ø	4Ø,1N	4Ø
phone 2m			
one 4Ø			
again 3Ø			
turn 1Ø			
burn			1Ø
popcorn 9Ø, 1n		1N	
been		1N	
napkin 1Ø			
kitchen 1Ø			
medicine		1N	
checking		1Ø	
talking		3Ø	
pulling	1n	1N	
doing 1Ø		1Ø	
popping 3Ø			
jumping 1Ø			
	m		
come	5m	1Ø	
some 2m	2m	2Ø,8m	
same		2m	
them/him 1m	4m	1Ø,6m	1Ø
arm 1Ø			
bathroom 3Ø			
	ŋ		
thing 4ŋ	2ŋ		2Ø
wrong 1ŋ			
bring		1Ø,2N	

29Months

____ //	____##V	____##Obst	____##Son
	n		
mine 3Ø			
one 9Ø,2n	5Ø (4[ʔ]),7n	1N	
on 6Ø,2n		4Ø,1N	2Ø
in 2Ø	2n	1N	
man 1Ø			
down 1Ø,1m		2Ø,1N	
popcorn 4Ø	1Ø		
gone	2n	1N	
Robin	1Ø	2Ø	1Ø
run 1Ø			
can	1n		
open 1Ø	1n		
alone 1Ø [ʔ]			
tone		2N	
earring 1Ø			
crying 1Ø			
sleeping 1Ø	1Ø		
calling	1n		
doing 1Ø			
nothing 1n			
	m		
come 1m	1Ø,3m	1m	
some 1Ø	3m	3Ø,4m	1Ø
him,them 1Ø,4m,1Vp	2m	1m	1m
thumb 2Ø			
time 3m			
room 2Ø		1Ø	
game 1Ø[ʔ]			
home 1Ø,1m		1m	
from		1m	
bathroom 1Ø			
	ŋ		
thing 1ŋ			

Table 10. One Speaker's Chronological Journey Towards the Acquisition of Final Nasal Consonants in Relation to Nasalized Vowels:18-29 Months

____//	____:=#V	____:=#Obst	____:=#Son
	18-20 Months		
	n		
14Ø	1n		
	m		
1Ø,3m	1m	1m	
	ŋ		
1ŋ			
	21 Months		
	n		
4ØØ,2n,14m		1Ø	
	m		
1m		1m	
	ŋ		
	22 Months		
	n		
38Ø,1n,2m	1Ø	6Ø,1N	4Ø
	m		
1Ø,1m	6m	3m	
	ŋ		
	23 Months		
	n		
34Ø,4n,6ŋ	8Ø,4n	8Ø,1N	4Ø
	m		
2Ø,13m,1ŋ	6m	4Ø,9m	
	ŋ		
6ŋ			
	25 Months		
	n		
44Ø,3n	1Ø,3n	7Ø,3N	2Ø
	m		
3Ø	3m	1Ø,1m	
	ŋ		
4Ø,1ŋ,1n			1Ø,1N
	27 Months		
	n		
45Ø,2n,4m	7Ø,23n	18Ø,12N	12Ø,3n
	m		
4Ø,3m	11m	4Ø,16m	1Ø
	ŋ		
5ŋ	2ŋ	1Ø,2N	2Ø
	29 Months		
	n		
33Ø,5n,1m	8Ø,14n	8Ø,7N	3Ø
	m		
9Ø,9m	1Ø,8m	4Ø,8m	1Ø,1m
	ŋ		
1ŋ			

Table 11. .Summary Table of Major Variants for Final Nasals for C.H.:28-29 Months.

Several observations can be made on the basis of following C.H.'s progression toward the norms and constraints indicated by the older children. First of all, the constraint of the [+coronal] nasal is apparent from the earliest point in our time frame. In utterance-final position, where most of the earliest items are found, there is a clear-cut preference toward realizing the nasal segment if it is not n. This is a consistent and regular constraint that appears to carry through all the time periods we have examined. In this regard, it is interesting to note that there are acquisitional stages where the relatively infrequent final segment variation of normative n fluctuates with m, but the converse is not true. For example, consider the production of balloon, bone, and even mine at 21 months. In each of these cases, the final segment m is more likely to occur than n. A reasonable explanation for these cases is a kind of progressive consonant harmony with the initial bilabial. Consonant harmony is, of cou-se, a well-known child language phenomena and there is no reason to reject its possible application here (cf. Vihman 1978). Consonant harmony here apparently affects realization of bilabial nasals but we do not have instances of normative m segments being affected by alveolar consonant harmony so that they become n (e.g. drum does not become a drun). The evidence from the limited cases of utterance-final segment realization, then, favors the natural strength of final bilabial nasals segment realization over alveolars.

The strength of the following vowel on the realization of a nasal consonant is also indicated as an acquisitional step which parallels the constraint we isolated for the more developed versions of the VBE rule. While there are very few examples of following vowel environment in the earliest months we have examined, the preference for consonant in this environment is clear from the first occasions when we find adequate examples.

of a following vowel environment. The naturalness of the VNV sequence, then, appears in the earliest stages and stabilizes as a variable phenomena. The preference for a nasal segment occurring between vowels is reinforced by two observations we have found in the phonology of C.H. during the 21 and 22 month-old-stage. First of all, we find several occasions of an epenthetic final vowel, so that a final items such as [man ə] for mine or even [mam ə]. At the same time, we observe intervocalic, intra-word n segment realization, so that the item Ernie, for example, is realized with an intervocalic n in 9 out of 10 productions we tabulated at 22 months. Finally, we find several instances of anticipatory n insertion to break up potential vowel cluster. For example, hold on is produced several times as /honɔ/ with a final nasal vowel but a nasal segment breaking up the cluster of /ho^{u} +ɔ/. We even get several instances of other alveolar stops intervocalically being realized as n, so that we get [in ɪ] for eating and [m æ nə] for matter. Without making too much of such isolated instances and processes, we can conclude that the preference for the nasal segment intervocalically is being evidenced, perhaps with a bit of overcorrection. The evidence supports the acquisitional analogue for the developing constraint of the following vowel environment. The same might be said for the following obstruent context, which appears to fall between the following vowel and final pause. We cautiously conclude, then, that the constraints appear to be reflective of the acquisitional sequencing.

With respect to nasalized vowels passing through a stage in which they are followed by a nasalized consonant (cf. Ruhlen 1978), there is no indication that the nasalization for alveolar segment first passes through a segmental stage. Nasal vowels seem to start out as such and alveolar nasal segments are then acquired in appropriate contexts. With very few examples for m and n, we can only make the most tentative and speculative

conclusions, but the limited data seem to indicate that the older time frames have more examples of utterance-final nasal vowels than do the earlier ones. There is indication that final m is often acquired a consonant quite early. As time moves on, however, the stronghold of consonantal m is loosened until it falls into a context for variable deletion at least when followed by a pause. We cannot be certain of the reason for this given the limited data, but the possibility of a overgeneralization of the nasalization process is quite real. There are, however, a number of alternative explanations, including the fact that the later examples show final m lexical items which we have found susceptible to vowel nasalization (e.g. room, bathroom) and the fact that the increasing length of the utterances at this stage may reveal a more prosodically-based constraint on the application of the rule (e.g. the longer the utterance, the more likelihood of a final nasalization pattern affecting m). At this point, we can only speculate about the reasons for the kind of patterning that seems to be indicated by our limited data. If this were in fact the case, we would have a limited example of a nasal segment being acquired and then becoming subject to the vowel nasalization process.

As can be seen in our pilot longitudinal analysis here, there is much knowledge about the actual acquisitional process that can be ascertained only by looking at an individual's development of nasalization and the corresponding nasal consonants over time. Using this kind of data along with our cross-sectional data, a number of the major issues confronting investigators of vowel nasalization and childhood language variability seem answerable.

NASALIZATION IN BROADER PERSPECTIVE

In Ruhlen's (1978) comprehensive review of nasal vowels, a number of universal tendencies concerning nasalized vowels and their relationships to

nasal consonants are set forth. In addition, some important issues that need to be resolved on the basis of future research have been delimited. Mentioned prominently as areas for future research are: (1) the acquistion of nasal vowels, (2) language change and nasal vowels, and (3) a cross-linguistic study of the kinds of rules affecting nasalized vowels. While the current study is in no way complete, it bears on all three of these issues in one way or another.

One of the most intriguing comparisons to be found in our VBE study and that detailed in Ruhlen's useful summary concerns the relationship between nasalized vowels and their nasal consonant counterparts. Granted the differences between the categorical types of studies that have been used as a basis for Ruhlen's cross-linguistic comparison and the analysis of variation that we have undertaken here, the parallels are obvious. Clearly, the effect of a following vowel prohibiting nasal consonant deltion is found cross-linguistically, and for fairly apparent natural phonetic reasons. While most studies do not delimit differences between utterance-final position and pre-obstruent position, most studies tend to indicate at least indirectly that utterance-final nasal consonants are readily deletable. And, other things being equal, (i.e. no surrounding phonological effect nullifying the effect), n seems to be more readily susceptible to vowel nasalization than at least bilabial nasals. Our constraints for the emerging VBE variety then, appear to capture some universal effects concerning the susceptibility of nasal consonants to the vowel nasalization process. Available evidence on diachronic studies of language change indicate that the constraint effects outlined here for VBE are those which have a constraining effect on vowel nasalization over time. A language change may stop at a particular point in its movements toward nasal vowels, but that point should be reflective of the natural constraint effects outlined here. In other words, nasal

vowels in utterance-final position should preceded the change to nasal vowels preceding vowels (e.g. compare French and Polish) and an implicational relationship should apply (NV___V>NV___//). Similarly, n vowel nasalization should precede the nasalization of other nasal consonants as in:

$$\begin{bmatrix} -cor \\ +nas \\ +cons \end{bmatrix} \longrightarrow \emptyset \; \supset \qquad \begin{bmatrix} -cor \\ +nas \\ +cons \end{bmatrix} \rightarrow \emptyset.$$

From our comparison of VBE with other nasal vowel languages, it is difficult to conclude that there is anything about this which is language-specific to VBE. It simply appears that, at this stage, VBE functions like just another nasal vowel system. Perhaps it is somewhat more in transition than some others, but it is very much like the others in most essential details. What is learned about its acquisition here should therefore have much more general application in understanding the early stages in the life cycle of the individual learning nasal vowels and in its various steps in language change over time.

AN APPLICATIONAL CONCERN

While our primary concern here is not the practical application of the kinds of information acquired in this study, it is impossible to avoid some of the specific implications that may pertain to the phonological assessment of speakers learning a non-mainstream variety. Considering the traditional normative data applied to speakers acquiring final nasals (cf. for example, Table 3) as it might apply to a VBE speaker acquiring a variable nasal vowel system. Such an application obviously would be quite inappropriate for a VBE speaker and could only lead to serious misrepresentation of the actual development of their indigenous system. This kind of possible misapplication has now been discussed in a number of recent considerations of linguistic diversity and language testing (e.g Wolfram 1976, Wolfram and Christian 1980,

Labov 1976, Vaughn-Cooke 1980). But it is also necessary to consider the assessment of subjects learning VBE who may not match their VBE speaking peers. Information of the type acquired here is critical for such an assessment.

By way of illustration, we can consider the case of E.C. whose phonological development does not seem to match the other subjects in several respects. One of the ways in which E.C. does not match his 54 month-old peers concerns final nasal segments. For example, consider the incidence of final nasal consonant absence when the segment is followed by a vowel for the 54 month-olds.

TABLE 12 HERE

Table 12 shows how E.C. does not match his peers. Essentially, the nasalization of vowels has been extended beyond the phonological boundaries of the other subjects, particularly with respect to m. By this point in the development of the other children, final m is realized categorically when followed by a vowel, but E.C. has obviously not acquired this restriction on the process. The "effacement" process of vowel nasalization, then, has simply been extended beyond the reasonable VBE norms. This extension is supported by further details of E.C.'s realization of nasal consonants, since there are also cases of intra-word, intervocalic absence, such as [bəiræ bIt] for bunny rabbit and [$t^{h}\tilde{\varepsilon}$Isu] for tennis shoes, a rule application categorically absent for the other speakers by 54 months. The evidence suggests that this subject is not in line with other subjects acquiring VBE, and thus may be "disordered" in terms of the indigenous system. Obviously, we could not make this kind of determination without the specific information on the developing system of nasal vowels in the emerging VBE variety. Data such as that accumulated here is an obvious first step in developing appropriate phonological norms for VBE-speaking children.

	m	%Abs	n	%Abs	_	%Abs
M.W.	0/25	0.0	3/57	5.3	0/5	0.0
E.C.	13/20	65.0	24/36	66.7	0/2	0.0
D.W.	0/11	0.0	6/13	46.2	0/1	0.0
S.T.	0/11	0.0	2/29	6.9	0/1	0.0
Total	13/67	19.4	35/135	25.9	0/9	0.0

Table 12. Comparison of Final Nasal Consonant Absence for 54 Month-Old Subjects When Followed by a Vowel.

CHAPTER V

Practical and Theoretical Implications of the Study

Theoretical Implications

In the discussion of the results from the first phase of data anlaysis, we have pointed out the similarities between young BE speakers and those of other languages with respect to the general types of content categories that are linguistically coded, thus providing additional cross-linguistic and cross-cultural evidence that the global content categories under study may be universally relevant to a description of any language system. Though the underlying general content categories expressed by language may be similar, we expect BE speaking children to differ from speakers of other languages with respect to some of the linguistic forms used to code the content categories. The data may provide some insight into the extent to which cultural and language specific factors influence the order and timing of acquisitional stages. A preliminary observation of our data already points to the use of a previously undescribed "go" construction by BE speakers that could be mastered earlier than the corresponding standard English construction. Though the characteristics of this early occurring "go" form have not been formally delineated for the adult language, it typically occurs in the syntactic context of "there go---" and "here go---" and refers to the location of something actually seen, heard, or felt. The 'go' form is never inflected for number, tense, or person. Preliminary observations of Standard English speaking Black children suggested that the 'go' construction corresponds to Standard English "there is" or "here is" with inflected copula forms to convey roughly the same meaning. Intuitively, it would seem that mastery of a Standard English construction that requires

copula conjugation for number and tense would require a longer development than the uninflected 'go' form used by BE speakers.

Practical Implications

An empirical foundation based on careful observation and analysis of children's language is a necessary prerequisite to the development of appropriate assessment tools for any group of speakers. This project extends the amount and type of acquisitional data on young speakers who are acquiring BE. It uses an approach to language sample analysis that is consistent with language assessment models that are currently emerging as alternatives to traditional standardized tests. Here we refer to the increasing disenchantment with formal standardized language measures for all groups of speakers because of their inability to capture dynamic aspects of a child's language competency that relate to meaning and use of spontaneously spoken language in the real world. (See Seymour and Miller-Jones, 1981; Butler, 1981 for comprehensive reviews of this issue.) Seymour and Miller-Jones (1981), making a case for nontraditional testing protocol, stated,

> "Standardized tests of language purport to assess aspects of communicative competence in the absence of communication. Language is social and dynamic: however, most standardized tests, by virtue of their standardized methodology and test format, can be neither social or dynamic." p. 234.

The inadequacy of many standardized tests for assessing the language of minority children is further compounded by cultural and ethnic bias (Wolfram, 1976; Vaughn-Cooke, 1980a).

Alternatives to standardized testing have included some means of analyzing the spontaneous language sample. Seymour and Miller-Jones have argued that the language sample is more revealing and thus superior to standardized tests (see also Launer and Lahey, 1981). They claim that:

> "A .5 hour conversation [30 minutes] with a child in a relevant setting can yield far more information about the child's language than is possible with formal testing." p. 238

Geffner (1981) suggested that a qualitative analysis of a spontaneous language sample be undertaken to obtain information about the child's semantic and pragmatic abilities. Citing Lucas (1980), it was recommended that the following question be among those posed in efforts to determine the child's abilities in these areas.

> "Does the child's language contain [reference to] objects, actions, and events in a variety of relationships?" (p. 3)

This question could be answered by using the findings reported for this study as initial normative guidelines for working-class Black children. Given our results, we would expect an 18-month-old child's language to code at least two semantic categories one of which is 'action'. By 3 years we would expect the child's language to code many more content categories including states, possession, negation, mood, time, etc., and of course, by 4 1/2 years we would expect a child's language to code complex superordinate relationships like causality, etc.

Below is a summary of the categories coded at the three age levels.

Age Group	Semantic Categories
18 months	Action (coded by all Ss)
	Existence (coded by all Ss)
	Location (coded by 2 Ss)
	Negation (coded by 2 Ss)

Age Group	Semantic Categories
18 months (Continued)	Possession (coded by 2 Ss)
	Specifier (coded by 1 Ss)
	Attribute (coded by 1 S)
3 year-olds	Action (coded by all Ss)
	Existence (coded by all Ss)
	State (coded by all Ss)
	Location (coded by all Ss)
	Negation (coded by all Ss)
	Time (coded by all Ss)
	Quantity (coded by all Ss)
	Specifier (coded by all Ss)
	Possession (coded by all Ss)
	Attribute (coded by all Ss)
	Recurrence (coded by all Ss)
	Dative (coded by all Ss)
	Mood (coded by all Ss)
	Causality (coded by 1 S)
	Coordination (coded by 1 S)
4 year-olds	Action (coded by all Ss)
	Existence (coded by all Ss)
	State (coded by all Ss)
	Location (coded by all Ss)
	Negation (coded by all Ss)
	Time (coded by all Ss)
	Quantity (coded by all Ss)

Age Group	Semantic Categories
4 year-olds (continued)	Specifier (coded by all Ss)
	Possession (coded by all Ss)
	Attribute (coded by all Ss)
	Recurrence (coded by all Ss)
	Dative (coded by all Ss)
	Mood (coded by all Ss)
	Causality (coded by all Ss)
	Coordination (coded by all Ss)
	Epistemic (coded by 3 Ss)
	Antithesis (coded by 1S)

These findings are already being utilized as a guide for assessing the language of working-class Black speakers in atleast one practical setting.

The subsequent longitudinal data analysis should complete the details of the developmental sequence by allowing us to observe if 18-month-old children achieve the same level of functioning observed for the three-year-old children and if the content categories emerge in the same order for all children. Among 3 and 4-year-old children, it will be necessary to determine the age and order of acquisition of those content categories that code complex relationships like epistemic, antithesis, etc.

Besides bracketing the age range in which the various global content categories emerge in the languages of these children, much detailed work remains with respect to documenting age and order or acquisition for specific subcategories of semantic distinctions within the global referent domains. Preliminary data analysis has revealed the enormous complexity and range of

semantic distinctions that can exist within a global content category. To illustrate, our observations on location like those of Bloom, et al. (1975), revealed that working-class Black children exhibit knowledge of dynamic locatives (e.g., "go up", "go down", "throw over"), which code movement orientation and direction, and stative locatives (e.g., "in there", "on the ground", "behind me", etc.), which code positional states. In both the dynamic and stative subcategories, locative knowledge appears to be further differentiated in terms of whether the children can talk about location of actions, events, objects, etc. Unfortunately, language tests have assessed only knowledge of stative locatives, which emerge later than knowledge of dynamic locatives. The practical disadvantages resulting from the lack of input from current research should be obvious.

Data on meaning in language add an important dimension to the assessment of children's language but, this alone is not enough. Children not only learn that language can be used to represent certain notions about the world, but in addition, they master the conventional forms for representing such notions, inasmuch as communication requires the use of mutual codes for expressing what each speaker knows about the world. A description of the linguistic forms used to code the various semantic or conceptual categories is an obvious goal of future analyses. We expect to focus on the general types of syntactic and morphological relationships for expressing the content categories as well as additional segmental aspects of the sound system. Since assessment strategies must be able to differentiate language differences due to pathology and those due to dialect diversity, it will also be necessary to identify those features of the developing BE system that differentiate it from other English varieties.

APPENDIX A

STANDARD CHECKLIST QUESTIONNAIRE

Demographic Screening Questionnaire

Instructions: Please provide the following information about each child who is between 15 months to 6½ years at your facility. If you are uncertain about the information for a category, place a (?) in the designated space. Identify the children by first name and last name initial only. All information will be kept confidential.

Name of facility_____

Address of facility_____

Name of staff person_____

Date_____

Child identity (first name and last name initial)	Date of birth	Sex	Race	Parent occupation		Hearing problems		Observable body deformities		Two lang. in home		Health condition			Comments
				Mother	Father	Yes	No	Yes	No	Yes	No	Good	Poor	Unstable	
_____															
_____															
_____															
_____															

APPENDIX B

PARENT CONSENT FORM

Parent Consent Form

I, _____, grant permission for my child,
(print full name)
_____, to participate in a study of normal
(print full name of child)
children's language development. I understand that the ethical and privacy rights of my child will be protected and that all steps will be taken to insure that the child will suffer no physical or psychological harm.

I understand that my child's speech will be observed in my home every four or five weeks between October, 1980 and October, 1981. These observations are to be arranged according to the convenience of my family and will require no alterations of my home or routine activities.

_____
Signature of parent or guardian

_____
Relationship to the child

APPENDIX C

LETTER OF AGREEMENT TO PARENTS

We are requesting permission for your child,_____ to participate in a study of normal children's language development.

You probably already know that children do not learn to talk like adults all at once. They learn more and more about talking as they get older. By the time children go to school, they have learned a great deal about talking. Through your cooperation, we hope to learn more about the different stages of development that a child normally passes through as he learns to talk in the first six years of life. This information is very important to teachers and other professional persons who must determine whether a child is talking normally.

You can help us learn more about what children normally do when they are learning to talk by allowing us to observe _____'s speech every three to four weeks for eighteen (18) months, beginning in November, 1980, and ending in April, 1982. These observations will be made in your home at the convenience of your family. They will require no alternation of your home or routine activities. Each visit should last one hour or longer depending on your schedule and the child's tolerance. If the child does not talk alot, it will be necessary to make more than one visit during the same month.

During each visit, one of the project directors (usually the same one) will observe your child while he/she is playing, or engaging in routine activities of daily living like eating, etc. Your child will be observed when he is talking to you, the project director and to brothers, sisters, playmates, or any other person/s who are in the home at the time. The situation in which the child talks will be video recorded. All information received will be confidential. At no time will you or your child be identified in any report of these observations.

As a token of appreciation, you will be paid $15.00 for each month you participate in the project. Monthly payments will be made following completion of the observation period.

If you agree to participate in the project, please sign the statement attached.

Fay Vaughn-Cooke
Co-Project Director

Ida J. Stockman
Co-project Director

3520 Prospect Street, N.W. Washington, D.C. 20007 -131- (202)298-9292 Cable: CENTAPLING

APPENDIX D

STANDARD RECORDING FORM

Name and ... : C.W.
Sex : Male
Age at Recording : 2 years 8 months
Tape Identification: S_8II

Date :
Page No. : 25

Context	Child's Utterance	Tape Location Seg. #. Time	Semantics Categories
Child II: That car going back (pointing)			
(C.W. reaches over to track to pick up his car)			
	Dis mine./		Possession, state
I: What's wrong with your car? (Noticing that car has stopped on track)			Causality,
	Mine's broke cause it don'		(Possession, state)
(C.W. inspecting car)	wanna go./		(mood, action,
			negation)
(Incomplete utterance)	I can -------/		
(Children place cars on track and watch them go down race course)			
(C.W. picking up a car)	Gimme dis one./		action, dative,
Child I: Here's a blue car			Specification
(C.W. imitating Child I)	A blue car./		

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APPENDIX E

CASE HISTORY FORM

CASE HISTORY FORM

(Adapted from the CHILD CASE HISTORY FORM used in the Howard University Speech and Hearing Center)

Name Informants:_____ Date:_____

Address:_____ Telephone:_____

Age:_____ Date of Birth:_____ Sex:_____

FAMILY HISTORY

1. Mother's Name:_____ Age:_____ Handedness:_____

   Address:_____ Phone(Home)_____(Work)_____

   Education:_____ Occupation:_____

   Native language:_____ Range of annual income:_____

   Length of residence in D.C. area:_____

   Does Mother speak any other language?_____

2. Father's Name:_____ Age:_____ Handedness:_____

   Address:_____ Phone(Home)_____(Work)_____

   Education:_____ Occupation:_____

   Native language:_____ Range of annual income:_____

   Length of residence in D.C. area:_____

   Does Father speak any other language?_____

3. Siblings, other children, and or other people in the home:

Name	Age	Sex	Speech Problem	Speaks another language

4. PreNatal and Birth History

a) Mother's condition during pregnancy (Illnesses, Shocks, Injuries):____

_____

_____

b) Number of months of pregnancy:_____

c) Length of labor:_____ Medication:_____

d) Any unusual condition of baby, (describe):_____

_____

_____

e) Birth weight:_____

f) Delivery: feet first:_____ head first:_____

Caesarian Section:_____

g) New-born illnesses?_____ Describe:_____

_____

h) Did child have any feeding problems?_____

_____

i) Age of mother at birth_____ father?_____

j) Number of mother's still births or miscarriages:_____

5. Child's Health History

Please state below: a) any major illnesses, accidents, operations, etc. b) age of occurence c) any resultant, related health complications of handicaps: (SEE NEXT PAGE)

a) Illness, Accident, etc.	b) Age	c) Any permanent affect on child's health or ability
1.		
2.		
3.		
4.		
5.		
6.		
7.		
8.		

a) Any known hearing problems:_____ Describe:_____

_____

Hearing aid worn?_____

b) Any known visual problems? No _____ Yes _____

Describe:_____

Glasses ever worn? No _____ Yes _____

c) Name and address of medical consultant:_____

_____

_____

d) Any past or present medical treatment, medicines, rehabilitation, etc.

No_____ Yes_____ Describe:_____

(Reason, type, duration)_____

_____

e) Any allergies or sensitivities? No_____Yes_____(Describe)_____

_____

f) Date of last physical exam_____ Results_____

_____

6. Child's Developmental History

Give age in months in which the following took place:

Sat alone_____ Stood alone_____

Walked alone_____ Toilet trained_____

Dressed self_____ Established handedness_____

Crawled_____

7. Social and Emotional Development

a) Indicate whether the child exhibits any of the following behaviors:

	Often	Seldom	Never
Poor eating habits	____	____	____
Sleeplessness	____	____	____
Nightmares	____	____	____
Refusal to obey	____	____	____
Fighting	____	____	____
Jealousy	____	____	____
Thumb or finger sucking	____	____	____
Tongue or lip sucking	____	____	____
Hurting other children	____	____	____
Nervousness	____	____	____
Fatigue	____	____	____
Temper Tantrums	____	____	____
Strong fears	____	____	____
Strong hates	____	____	____
Lying	____	____	____
Stealing	____	____	____
Running away	____	____	____
Difficulty in responding to playmates	____	____	____

	Yes	No
10. Has difficulty following directions.	___	___
11. Is not taking at all.	___	___
12. Uses gestures more than speech.	___	___
13. Does not use words to make wants and needs known.	___	___
14. Is difficult to understand.	___	___

c) Is child's speech intelligible to family members? Yes____ No____

Explain_____

_____

d) Any previous speech or language therapy? (State where, when, why, therapist's name and progress made in therapy by child)

_____

_____

9. Educational Development

a) Name of school child is presently attending._____

_____

b) Standing and progress in school._____

_____

c) Child's attitude toward school._____

_____

d) Does the child have any specific difficulties relating to reading andd/or writing? Yes_____ No_____

(Please explain)_____

_____

10. Additional Information

Please explain any other significant factors relating to child's progress, behavior, socialization, etc._____

_____

11. Availability of child for research study_____

Do you expect to move in the next year?_____

Do you expect to quit your job in the near future?_____

How long have you been at your current residence?_____

APPENDIX F

LOG OF SAMPLING SESSION

Log of Sampling Session

Child's Name:_____

Age Group:_____

Date of Session:_____

Observers Names:_____

_____

Time and length of samplign session:_____

Session Cancellation:

Reason:_____

Rescheduled date & time:_____

- -

1. Observed utterances:

2. Any equipment problems? Yes___ No___ If yes, what kind_____

3. Amount of language elicited: Child did not talk_____

   Child talked very little_____ Child was moderately talkative____

   Child was very talkative_____

4. What was the setting for making the observations_____

5. Sequentially list child's general activities and physical location during sampling session including communicative interaction with persons other than investigators. _____

   _____

   _____

6. Noise level in sampling environment. Tolerable_____

   Tolerable but could be improved_____ Not tolerable_____

7. General comments about sampling session:

Name of log informant_____
Date of time of next sampling_____
Session_____

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